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MEDICINES,

THEIR USES

AND

MODE OF ADMINISTRATION;

INCLUDING

A COMPLETE CONSPECTUS OF THE THREE BRITISH PHARMACOPŒIAS,

&

AN ACCOUNT OF ALL THE NEW REMEDIES,

AND

AN APPENDIX OF FORMULÆ.

BY

J. MOORE NELIGAN, M.D.,

PHYSICIAN TO JERVIS-STREET HOSPITAL, AND LECTURER ON MATERIA MEDICA AND THE MAIEUTICS IN THE DUBLIN SCHOOL OF MEDICINE.

WITH NOTES AND ADDITIONS, CONFORMING IT TO THE PHARMACOPŒIA OF THE UNITED STATES, AND INCLUDING ALL THAT IS NEW OR IMPORTANT IN RECENT IMPROVEMENTS

BY

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PREFACE

OF THE AMERICAN EDITOR.

In introducing the present work to the profession in America, the editor feels great confidence in the favourable reception it will receive, in view of its intrinsic merits, so soon as it can be examined by those competent to estimate its practical value. He regards it as condensing within small compass an amount of information, upon the several departments upon which it treats, surpassing in kind and extent that found in any other volume in the English language. For though the Conspectus of Dr. Thompson, lately republished here, is an approach to a somewhat similar plan, yet the present work is so much more ample in its scope, and exhibits so extensive a range of topics of a critical and practical character, that it would seem to be occupying a field of professional research hitherto unexplored.

As a "book of reference for the practitioner, and an outline of Materia Medica for the student," it is presented to the public by the author with an unpretending title, in reliance that his labours will be appreciated by his professional brethren, without the adventitious favour which an imposing name is wont to bespeak. And yet this single volume will be found to compress within its pages, not merely "medicines, their uses and modes of administration," but a compendium of *Chemistry*, *Pharmacy*, *Toxicology*, *Pathology*, and *Therapeutics*, so far as these several departments are connected with the details of Materia Medica; and an elucidation of the nature, physical and chemical properties, modes of preparation and administration, and methods of adaptation to morbid conditions of function or structure, of every individual agent employed in the art of healing. And so skilfully is this process of condensation elaborated to our hands, that at a single glance, and, for the most part, within the compass of a page, all these several aspects of the

individual articles of the Materia Medica may be summarily examined.

But, while this just meed of praise is frankly bestowed upon the scientific labours of the learned author, the editor has not scrupled to criticise, with the freedom characteristic of our fraternity, not only the classification of the work, and its innovations upon our burdened nomenclature, but many of the author's theoretical, and a few of his practical observations, to which exception is taken for the reasons found in the accompanying notes, which, in every instance, are designated by brackets [ ], and which, for the convenience of the student, are inserted *in loco*, instead of being placed at the foot of the page, or in an appendix.

The nomenclature and pharmaceutics of the volume have been conformed to the Pharmacopœia of the United States, that great national work being everywhere recognised in this country, and approved by our universities and medical colleges, as entitled to be ranked with the similar publications of London, Dublin, and Edinburgh, the three British authorities cited in the text.

So, also, a number of new remedies, and many officinal preparations, both old and new, omitted by the author, have been supplied by the editor, availing himself of details furnished by two of his friends belonging to the New-York College of Pharmacy, Messrs. Milhau and Dupuy, to whom he acknowledges his obligations.

In the hope that the reprint of this valuable compend of Professor Neligan will be regarded as worthy the patronage of the profession and the public, and that the improvements attempted may contribute to the promotion of medical literature, the undersigned bespeaks for both the candid examination of medical teachers, practitioners, and students.

D. M. Reese.

PREFACE.

The object of the author in the following pages has been to furnish a concise view, but as complete as possible, of the different substances, both simple and compound, which are deemed worthy of a place in the *Materia Medica*. While, therefore, sufficient attention has been bestowed on the different articles contained in the three British Pharmacopœias, an account is also given of those remedies of more recent introduction, which, although not officinal, are important agents in the treatment of disease.

The difficulty, in the present state of our knowledge of systematically classifying medicines with reference to their therapeutical properties, has deterred many recent writers from adopting a physiological classification of the Materia Medica; but the great practical value of an arrangement which is based on the ultimate medicinal effects of remedial agents, has induced the author to adopt such a classification, in preference to either a natural-historical or alphabetical arrangement. In order, however, to afford a facility of reference, the chapters themselves, and the individual articles described in each chapter, are arranged in alphabetical order.

Although the author fully admits the interest attached to the study, and the advantages derived from a knowledge of the natural and chemical history of medicines, he has, nevertheless, thought that they might, not only with propriety, but with benefit, be omitted from a work of this character, which is intended as one of reference for the practitioner, and as an outline of Materia Medica for the student.

In describing each medicinal substance, the following plan is pursued:

1st. The official appellation and English name of each article are given; and, in the case of a vegetable substance, the native country and botanical classification of the plant from which it is obtained. For the advantage of the student, the most important characters of each medicinal plant are also concisely described.

2d. The Physical properties.

3d. The Chemical properties.

4th. The mode of preparation. Under this head the processes of the three British Pharmacopœias are given in full.

5th. The adulterations, and the manner in which they may be detected.

6th. The therapeutical effects, and the uses of the substance in the treatment of disease.

7th. The dose and mode of administration. Under this head all the officinal preparations of the British Pharmacopœias, as well as many of those ordered by the Continental and American colleges, are introduced.

8th. The incompatibles

9th. In the case of poisons, the antidotes and mode of treatment.

The author has added an Appendix of Formulæ, which are principally confined to the new remedies described in the work, and also an extended Posological Table.

Leeson-street, Stephen's Green, Dublin.

TABLE OF THE ABBREVIATIONS EMPLOYED.

B. C.	Botanical Characters.
P. U. & M. of Prep.	Part Used and Mode of Preparation
P. P.	Physical Properties.
C. P.	Chemical Properties.
Prep.	Preparation.
Th. E.	Therapeutical Effects.
D. & M. of Adm.	Dose and Mode of Administration.
Pharm. Prep.	Pharmaceutical Preparations.
Incomp.	Incompatibles.

PRELIMINARY OBSERVATIONS

BY THE

AMERICAN EDITOR

The following table of contents, which the author has prefixed to his volume, exhibits a classification of the Materia Medica professedly "based on the ultimate medicinal effects of remedial agents." This is intended as an approximation to the *Physiological* classification, which all concur in regarding as desirable, and, indeed necessary, in order to conform this department to the systematic arrangements so happily introduced into the other branches of medical science. The imperfection of our knowledge in respect to the laws of vitality, and the phenomena resulting from morbid and curative agencies, as applied to the living organization, does, indeed, present a formidable obstacle to such an arrangement of the multiplied articles of the Materia Medica as shall be unexceptionable, or which, in point of accuracy, shall be entitled to entire confidence. And, moreover, the improvements which are annually introduced in this department forbid the expectation that any classification can be made, in the present state of the science, which will not need to be modified, in order to keep pace with the march of discovery and improvement characteristic of the age. Still, however, there are certain great outlines, which may be solved upon, as having enough of fixity and permanence to furnish the basis of a systematized arrangement less faulty than any yet adopted.

Dr. Nelson has here arranged the whole Materia Medica into [illegible] sections or chapters, alphabetically entitled as follows, viz.:

Antacids,	Emetics,	Sedatives or Contra-stimulants,
Anthelmintics,	Emmenagogues,	Sialagogues,
Antispasmodics,	Emollients,	General Stimulants,
Astringents,	Epispastics,	Special Stimulants,
Cathartics,	Errhines,	Tonics, and
Cerates,	Expectorants,	Supplementary agents.
Demulcents,	Narcotics,	
Diuretics,	Refrigerants,	

It may differentially be objected to this classification, that it is inaccurate, hypercritical, and incomplete; and that while it may vainly by proposing new technical distinctions, it does so still more unquestionably, by rejecting one or more significant and well-established terms, and substituting others of ambiguous and equivocal meaning. Besides, its last extended class or category of "supplementary agents" for which he found it impossible to provide a place in any one of his divisions, presents an inexpressible objection to his classification.

For the most accurate, philosophical, and complete arrangement of the Materia Medica which has ever been published, the reader is referred to the late publications on the subject by Professor Dunglison of the New-York University, a brief analysis of which will now be presented here.

He divides the Materia Medica into eleven classes, viz: 1. Antiphlogistics; 2. Permanent tonics; 3. Diffusible stimulants; 4. Nervine agents or nervous agents; 5. Astringents; 6. Evacuants; 7. Urinary agents; 8. Anthelmintics; 9. Epidermics; 10. Chemical agents; 11. Diet and regimen, in a general sense.

The obvious merit of this arrangement consists in the fact of its entire completeness, embracing every remedial and auxiliary agent included either in the Materia Medica or Materia Alimentaria, all of which may be comprised under one or the other of these classes without the unsightly appendage of a long list of "supplementary agents."

The first class, Antiphlogistics, he divides into nine orders, viz., Bloodletting, Cathartics, Emetics, Alteratives, Revulsives, Derivatives, Deobstruents, Diuretics, Cutaneous, and other local applications, Low diet and Rest. And these, again, he divides and subdivides as they severally admit of such division. The group of *Astringents*, including all the mineralia, &c., and *sedatives*, comprising all the antiseptics, &c., he places among the *General Alteratives*; while he assigns to the division of Tonics Antimony, Iodine, Bromine, Gold, Silver, Iron, Zinc, Mercury, &c., with their preparations, as also Strychnine, Veratria, Cicuta, Cinchonium, Cod's liver oil, Stramonium, &c., &c., together with all those agents, whether animal, vegetable, or mineral, which are included under the six subdivisions, as follows, viz.:

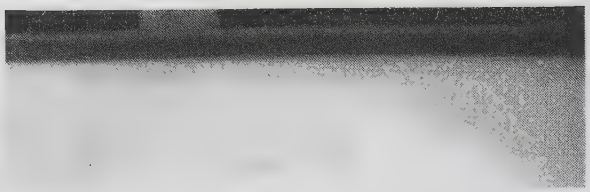
1. Adapted to scrofulous, and some other cutaneous affections;
2. Adapted to syphilis, and certain other cutaneous affections;
3. Adapted to scrofula complicated with syphilis;
4. Adapted to diseases of debilitation and pain.

5. Adapted to intermittent fevers and intermittent inflammations.

6. Adapted to obstinate and chronic cutaneous diseases, &c.

Under the head of "cutaneous and other local applications," and order of Antiphlogistics, he includes, as subdivisions, *Epispastics*, *Caustics*, *Emollients*, &c.; while *Narcotics*, *Antispasmodics*, &c., are comprised in his class of "Cerebro-spinants or Nervous agents;" and in the class of "Chemical agents" he places all the *Antacids*.

But without entering into farther details, for which reference must be had to the work of Professor Paine itself, enough is here exhibited to show its superiority over the arrangement of Professor Neligan. Attention is particularly invited to the fact that, in this work, the author has rejected the designation *Alteratives*, and in his classification substitutes the term "Special Stimulants." It will be seen by the other arrangement referred to, that a very large class of remedial agents are grouped among the Alteratives, and Professor Paine defines this term as including "all remedies which actually produce an influence upon disease;" and he cites the high authority of Pereira, who teaches that "this class includes nearly the whole of the articles comprising our Materia Medica." The substitute for the title of this class, as well as the rejection of the term alteratives, will be found animadverted upon in its proper place. The student is advised to estimate the merits of the two classifications by comparing them for himself.



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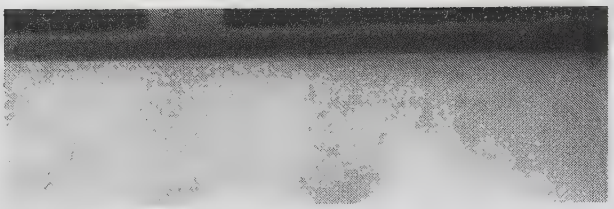

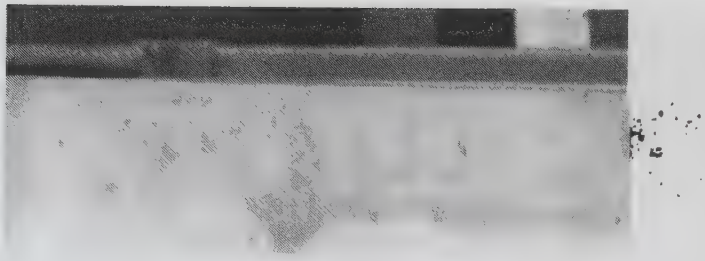

MEDICINES:

THEIR USES

AND

MODE OF ADMINISTRATION.

MEDICINES,

THEIR USES

AND

MODE OF ADMINISTRATION.

CHAPTER I.

ANTACIDS.

(Alkalies—Antilithics—Diluents.)

Antacids are medicines which correct acidity of the stomach and digestive organs, by combining chemically with the free acid existing there, and neutralizing it. Their action is manifestly only temporary and palliative, as they do not correct that peculiar state of the digestive organs which favours the formation of acid; and their continued use produces a precisely similar disease of the alimentary canal. Antacids should, therefore, be prescribed in combination with the vegetable tonics, and in no case should their administration be long persisted in without occasional interruptions. One or two circumstances relating to the particular remedy of this class which should be employed, require to be noticed. Where the acid exists in the stomach in the gaseous state, ammonia and its carbonate should be preferred, as, in consequence of their volatility, a gaseous acid, which would elude the action of the fixed alkalies, will be neutralized by them. If the acidity be present in the lower bowels, as in the cæcum or colon, magnesia or lime should be preferred, as being less likely to be neutralized or absorbed before they reach that portion of the intestinal canal than the other antacids. Where the acid exists in the urinary organs, the alkalies will be found best adapted, as they have a tendency to act more directly on the kidneys; and where it is *lithic acid* that predominates in the urine, the preparations of potash should be preferred to those of soda, as the salt formed by the combination of the former with the acid in question is much more soluble than that formed with the latter.

[illegible] the suggestion here made, touching the danger of the long-continued use of antacids, is of great practical importance, for no genuine dyspepsia has often resulted from the incautious frequency of their employment, the tone of the stomach being permanently destroyed. The alkalies and alkaline earths, when used as ant-

acids, are strictly chemical remedies, and, when taken in excess, are extremely necessary to correct both acid, fœtid eructations, and pyrosis of the stomach, and prove a source of nutriment to the system. The direction to combine them with vegetable tonics, which at once gains the end by taking the solid to and passing the fluid to remove it. A much better practice by removing the cause, than only upon antacids only as a palliative and temporary remedy, and employ suitable medicines and regimen, especially the means of removing the cause upon which the generation of acid depends. In a majority of cases, it will be found that indigestion or indolent dyspepsia is the source of acidity when the contents of the stomach become offensive. The food of such persons, instead of, remaining in the stomach undigested, becomes subject to chemical laws, and undergoes fermentation or putrefaction before passing the pylorus, and the generation of acids and gases is the result, which present us with the phenomena of flatulency and acidity, which usually coexist. In infant children, the excessive quantity and quality of the food which is so often administered or given is the source of the symptoms for which antacids are prescribed. In these, as well as in adults, therefore, proper diet and attention to regimen will soon correct the evil without medication, if treated early; but where the disorder has existed so long that the tone of the stomach is impaired, either by the disease or the treatment, the vegetable tonics may be required to be given with other agencies adapted to restore or improve the digestive functions.]

Ammoniæ carbonas acida, D. Ammoniæ hydras, L. Ammoniæ aqua, E. *Water of caustic Ammonia; Aqueous solution of Ammonia.*

P. P.—A colourless limpid fluid, with a pungent suffocating odour and a very acrid alkaline taste. The specific gravity varies with the strength of the preparation; that of Dublin is directed to be ·950, that of London and Edinburgh ·960.

C. P.—A solution of gaseous ammonia in water. Ammonia is composed of N. H$_3$, or of 1 eq. of *nitrogene* and 3 of *hydrogene* (Kane). At 32° F. water may be made to absorb 780 times its volume of the gas; the solution of the Dub. Pharm. contains 35 per cent., that of Lond. and Edin. 33 per cent. of ammonia. It neutralizes acids, with which it forms salts; gives a brown colour to turmeric paper, which is only temporary; and forms dense white fumes with the vapour of muriatic acid. Exposed to the atmosphere, the volatility of the gas, part of it rapidly escapes, while the remainder, absorbing carbonic acid, is converted into the carbonate of ammonia, which crystallizes in colourless [illegible] at 60°, a stronger solution forms long, [illegible] at 32° in long [illegible] solution of the [illegible] at 130°.

Adulterations.—Solution of ammonia often contains carbonate of ammonia, which is known by its effervescing with acids; or muriate of ammonia, which is detected by solution of nitrate of silver causing a white precipitate with it, nitric acid having been previously added to saturation. That it is of the proper strength is indicated by its being of the prescribed density.

TH. E.—Ammonia acts as a direct antacid, by its neutralizing powers; it also stimulates powerfully the digestive organs. It is, therefore, to be preferred to the other remedies of this class, in cases where we wish to combine the effects of a stimulant and antacid, as in cardialgia, and flatulence arising from acidity of the stomach; but if there be any tendency to inflammation present, it should not be employed. As an antidote in poisoning with the mineral acids, it is not so valuable as the other alkalies; but in cases of poisoning with prussic acid, oil of bitter almonds, &c., it is highly effectual.

D. & M. DOSE.—Min. x. to min. xxx. in an ounce of water, gruel, or any bland liquid.

INCOMP.—All acids; and the earthy and metallic salts, except those of potash, soda, lime, and baryta.

AMMONIÆ BICARBONAS, D. *Bicarbonate of Ammonia.*

P. P.—Large crystals of the right rhombic prism series, with a weak ammoniacal odour, and a saline taste.

C. P.—It is composed of 1 eq. of ammonia, 2 of carbonic acid, and 2 of water; or of 1 eq. of *amidogene*, 1 of hydrogen, 2 of carbonic acid, and 2 of water (Kane). It is permanent in the air; exposed to a strong heat, it evaporates, leaving no residue if pure; it is soluble in eight parts of water at 60°; boiling water decomposes it, driving off part of its carbonic acid and ammonia. The solution of it in water is faintly alkaline.

Dose.—*Ibid.* "In a proper apparatus, receive the product of two of carbonate of ammonia, until the cloth is saturated, in the middle of which any powder may be enclosed during the distillation; while outside is placed some of the carbonate that is formed. When one is to be used without heat, use caps to the pounds."

Th. E.—*This salt*, though scarcely ever given in the present day, is an excellent agent; it is free from the stimulating properties of ammonia or its caustic salts, and also is more applicable to the young.

D. & M. or Ann.—*Dr.* v. to gr. xxv. It may be given in powder, aqueous vehicles, or in any of the bitter infusions.

Incomp.—Same as for aqua ammoniæ.

AMMONIÆ CARBONAS. D. E. AMMONIÆ SESQUICARBONAS. L. *Carbonate of Ammonia; Sesquicarbonate of Ammonia.*

P. P.—A solid white salt, in semi-transparent fibrous cakes or fragments; with a pungent ammoniacal odour, and a saline pungent taste. Sp. gr. .966.

C. P.—It consists of 3 eq. of carbonic acid, 2 of ammonia, and 1 of water; or of 1 eq. of the bicarbonate, and 1 of a compound of which consists of 1 of amidogene, 1 of hydrogen, and 1 of carbonic acid (Kane). Exposed to the air, it effloresces, and falls into powder; carbonate of ammonia is evolved, and the remaining powder is the bicarbonate." It is sublimed by heat without decomposition if it be pure. It is soluble in four parts of water at 60°, but is decomposed by boiling water, and by alcohol; the solution is highly alkaline, but turmeric paper, which has been rendered brown by it, recovers its yellow colour on exposure to the air.

Prep.—*Ibid.* "Mixture of ammonia, perforated and well dried, and powdered lumps of salts, of each one part; coax, and put them into an earthen vessel and sublime the carbonate of ammonia with a gradually increasing heat, and keep it in tight bottles." *Acid. Salic.* "Hydrochlorate of ammonia and carbonate of lime, of each 24 parts; chalk, lime, reduce them separately to fine powder; mix, and put to sublime with a proper receiver, &c.) sublime with a gradually increasing heat."

Adulterations.—If this salt contain any fixed or insoluble impurity, it will not be entirely sublimed by heat, nor entirely soluble in water. Sometimes, owing to bad preparation, it contains muriate or sulphate of ammonia; their presence is detected by the former by nitrate of silver, the latter by muriate or nitrate of baryta, causing a white precipitate in a solution of the salt in water having been previously added to saturation.

Th. E.—As an antacid, it may be employed in the same cases of dyspepsy as the solution of ammonia; but where flatulence is present, the use of the carbonate is objectionable. Carbonate of ammonia is also administered with much advantage in the typhoid state of fever, and in cholera it has been employed with success by Dr. Burton, of London.—(*Guy's Hosp. Rep.*, vol. —.

D. & M. or Ann.—*Dr.* v. to gr. xx. in pill, or in any of the aqueous vehicles. Gtt. xxx. produce vomiting. Ammoniæ carbonatis, spec. D. E. *Liquor ammoniæ carbonatis* L. (Take of carbonate of ammonia, L. j; of water, f. ℥ xij. Dissolve the carbonate of ammonia in the water, and strain. The specific gravity of this solution should be 1.)

Dub.) A convenient strength for medicinal purposes; dose, minims to fluid. properly diluted.

Incompat.—Acids; calcareous salts; and the salts of iron, zinc, lead, and mercury; but sulphate of magnesia is not incompatible with carbonate of ammonia.

Calcis aqua, B. E. Calcis hydras, L. *Lime-water.*

P. E.—A transparent, colourless liquid; odourless, but having a disagreeable alkaline taste.

C. P.—Lime is only sparingly soluble in water; requiring 778 parts at 60° and 1270 parts of boiling water; being, therefore, more soluble in cold than in hot water, so that a saturated solution, when boiled, deposites a hydrate of lime. Exposed to the air, lime-water absorbs carbonic acid, and becomes covered with a thin crust of carbonate of lime. It acts faintly alkaline on vegetable colours; gives white precipitates with carbonic and oxalic acids, but does not precipitate with sulphuric acid.

Prep.—*Dub.* "Break unslaked lime and boiling water, of each one part, sprinkle the water on the lime, so as completely to slake it, covering vessel the time quite hot, and filter as quickly as possible. Then pour over it six parts of cold water; cover the vessel again, and agitate the mixture frequently for an hour; then, as soon as the lime has subsided, decant the clear liquor, and preserve it well stopped bottles." *Lond.* "Lime, lbss.; boiling water, Oxij.; upon the lime, first slacked with a little of the water, pour the remainder of the water, and shake them together, then immediately cover the vessel and set it by for three hours, afterwards keep the solution with the remaining lime in stopped glass vessels; and when it is to be used, take from the clear solution." *Edin.*—"Lime are convenient quantity of water, pour a little of it over the lime previously reduced to powder; when the lime is slaked, add to the rest of the water in a bottle; agitate well; allow the undissolved matter to subside; pour off the clear liquor when it is wanted, replacing it with more water, and agitating strongly as before."

Th. E.—Lime-water is a useful antacid in those forms of dyspepsia characterized by great irritability of the stomach, accompanied with constant secretion of acid. In America, a diet almost exclusively of lime-water and milk in the proportion of one part of the former to two or three of the latter, is found to be a very effectual plan of treatment in dyspepsia accompanied with vomiting of blood. In the acidity of stomach of the gouty and rheumatic diathesis, the alkaline antacids should be preferred to this.

D. & M. ex Aqua.—ʒij to ʒiv. It is most conveniently administered in milk, which conceals its disagreeable taste; but as this would be an injurious addition in many cases, it may be given alone. When lime-water has been administered for some time, its use should be occasionally discontinued.

Incompat.—The vegetable and mineral acids, tartar emetic, and most vegetable infusions and decoctions, as of calumba, cinchona bark, gentian, senna, rhubarb, sarsaparilla, &c.

Cretæ præparata, D. L. E. [and U. S. P.]. Calcis carbonas impura, E. *Prepared chalk; impure carbonate of lime.*

P. E.—Prepared chalk is usually in small conical masses, of a dull greyish white colour, opake, and very friable; the powder is

[illegible] and magnesia. It is white and tasteless, and [illegible] [illegible] [illegible] sp. gr. about 2·3. Precipitated carbonate of magnesia is somewhat less ponderous.

D. P.—It is composed of one eq. of carbonic acid [illegible] [illegible] lime. It is permanent in the air; exposed to a red heat it parts with its acid, and is converted into quicklime. It is insoluble [illegible] but is not soluble in water. It dissolves in about 1000 parts of water containing carbonic acid, from which, however, it is deposited by exposure to the air.

[illegible] [illegible] [illegible] [

and aromatic, principally employed in diseases of children, from gr. x. to gr. xxx. *Trochiscus cretæ*, E.—(Prepared chalk, ℥ij.; gum-arabic, ℥i.; nutmeg, ℥ss.; pure sugar, ʒvi.; reduce them to powder, and beat them with a little water into a proper mass for making lozenges.) Antacid and aromatic, used in acidity of the stomach; dose, ℈ss. to ʒij.

Incomp.—Acids, and acidulous salts.

Magnesia, D. L. E. *Magnesia; Calcined Magnesia.*

Ed. P.—A very *light*, soft powder, perfectly white, odourless and tasteless, slightly adherent to the tongue. Sp. gr. about 2·3.

Lond. P.—It consists of one eq. of magnesium, and one of oxygen. Exposed to the air, it absorbs carbonic acid and moisture; it is slightly caustic. It is very slightly soluble in water, requiring 5142 times its weight of water at 60° for its solution; and, like lime, it is more soluble in cold than in hot water. It acts feebly alkaline on vegetable colours.

Dub. P.—"Take any convenient quantity of carbonate of magnesia in a crucible, and expose it for two hours (at 60 the powder, when suspended in water, precipitates no effervescence on the addition of muriatic acid, E. L. and preserves it, when well dried, upon glass leaves." D. P.—"Carbonate of magnesia, ℔iv (burn it in two ounces at a very strong fire." L.

Adulterations.—Magnesia generally contains some carbonate, either from faulty preparation or bad keeping; its presence is indicated by its causing effervescence with dilute mineral acids. It is frequently adulterated with lime, silica, and alumina. If it contain silica it will not dissolve completely in dilute muriatic acid; if alumina be present, the solution in dilute muriatic acid precipitates with excess of ammonia; and if lime be present, solution of oxalate of magnesia, or of the bicarbonate of potash, gives a white precipitate with the solution in the dilute acid.

Ed. P.—As an antacid, magnesia is employed in dyspepsia attended with acidity of the stomach; in such cases it is generally preferred to the alkalies, as being less irritant, and as the combination which it forms with the free acids of the stomach are gently laxative. In gastrodynia and heartburn, given in combination with some aromatic, a short time before the meals, it seldom fails to prove beneficial. It is also administered with much advantage in the acidities consequent on infantile diseases, and in persons of a gouty and rheumatic diathesis. Magnesia is also used as an antidote in poisoning with the mineral acids.

D. & M. Dose and Adm.—*Gr.* x. to gr. xv., twice or three times daily. It may be given suspended in milk, or in some aromatic water.

Incomp.—Acids; acidulous salts; metallic salts; and muriate of ammonia.

Magnesiæ carbonas, D. L. E. *Carbonate of Magnesia.*

Ed. P.—A very white powder, light and bulky, inodorous and tasteless, varying in density, two sorts being commonly met with; *first*, very light, and either in very fine powder or in small cubical pieces (*Ed. P. magnesia*); the other dense, and somewhat granular (*heavy magnesia*).

C. P.—According to Berzelius, it is a compound of 1 eq. of magnesia with hydrated carbonate of magnesia, containing 2 eq. of carbonic acid, 4 eq. of magnesia, and 4 eq. of water. It is permanent in the air; exposed to a red heat, it parts with all its carbonic acid, magnesia being left. It is very sparingly soluble in water, requiring 2493 parts of cold, and 9000 of hot water for solution. But water charged with carbonic acid gas dissolves it in the proportion of 13½ grains to the ounce. It acts, on vegetable colours, feebly alkaline.

Adulterations.—They are similar to those of calcined magnesia, and may be detected by the same tests.

Th. P.—Carbonate of magnesia is employed as an antacid in the same cases as magnesia; but, owing to the carbonic acid which is disengaged in the stomach when it meets with the acids naturally present in that viscus, it is objectionable in many cases.

D. & M. of Ass.—Gr. xv. to ʒss; it may be administered in infusion of gentian, or in some aromatic water. The most convenient form, however, for the exhibition of the carbonate of magnesia is the solution in carbonated water, which was first introduced into notice of the profession by Sir James Murray of Dublin. It is prepared by exposing distilled water, in which very pure carbonate of magnesia is suspended in the proportion of 1½ grains to the latter to every fluid ounce of the former, to a stream of carbonic acid gas forced into it by means of steam power, until a complete solution is formed. It then constitutes *Aqua magnesiæ carbonatis*, and is given as an antacid in doses of ʒss to ʒiss. *Pulvis magnesiæ*, L. (Carbonate of magnesia, ʒvi.; pure sugar, ʒiij.; oil of nutmeg, ♏ij.; beat them to powder, with mucilage of tragacanth, q. s. to form a mass, for lozenges.) In acidity of the stomach, *ad libitum*.

INCOMPT.—Acids; acidulous and metallic salts; magnesia; ammonia; and lime-water.

POTASSÆ CARBONAS AQUA D. LIQUOR POTASSÆ, L. POTASSÆ AQUA, E. *Water of caustic potash; Solution of potash.*

P. P.—A transparent colourless liquid, with an oily appearance and a soapy feel; it is odourless, but has an intensely acrid caustic taste. Its specific gravity is different in the three British Pharmacopœias; that of the *Dub.* preparation is 1·080, that of *Lond.* 1·065, and that of *Edin.* 1·072.

C. P.—A solution of potassa in water. Exposed to the air it absorbs carbonic acid rapidly, and is converted into the carbonate of potash. By heat the water is driven off, but no further change takes place. It powerfully corrodes vegetable colours, even litmus. Solution of potash converts most oils and fats into soaps. It does not effervesce with acids, but combines with them, forming salts

USES.—[illegible] of potash [illegible]

Adulterations.—Solution of potash as kept in the shops is frequently too weak; this is known by its not being of the density prescribed by the colleges. If it contain any carbonate, it will effervesce on the addition of a dilute acid. A white precipitate caused by carbonate of soda, in the solution neutralized with dilute nitric acid, indicates the presence of lime.

Ths. U.—In dyspepsia, attended with acid eructations, cardialgia, and gastrodynia, solution of potash is employed with much benefit. It not only neutralizes the free acid, but also counteracts the morbid tendency of the stomach to acid secretion. Its beneficial action is especially manifested in various forms of chronic cutaneous disease, so often dependent on acidity of the digestive organs; in which cases it should be preferred to the other remedies of this class. In the acidity of the stomach of the gouty and rheumatic, and in deposites of lithic acid, or the lithates in the urine, solution of potash is also administered with much advantage.

D. & M. or *Aver.*—Min. x., gradually increased to min. xl.; it should be largely diluted. Fresh table beer or veal broth, are said to conceal its unpleasant taste, and, consequently, are frequently employed as vehicles for its administration. The combination with some aromatic bitter, as gentian, cascarilla, or calumba, is generally found highly beneficial. — *Brandish's alkaline solution* (Liquor Potassæ penitentiæ, ℥ij.; quicklime, recently burned, and wood ashes (good the ash), of each, ℥ij.; boiling water, cong. vj.; add first the lime, then the pearlashes, and afterward the wood ashes, to the boiling water; mix, and in twenty-four hours draw off the clear liquor, to every pint of which add oil of juniper, min. ij.). This solution has a less disagreeable taste than the officinal *aqua potassæ*, and is therefore more generally employed; it is, however, very liable to vary in strength. Dose, ʒss. to ʒij.

Incomp.—Acids; acidulous and metallic salts; and the preparations of ammonia.

POTASSÆ SUBCARBONAS, *D. L. E. Bicarbonate of Potash.*

E. P.—Transparent, colourless crystals, the primary form of which is a right oblique-angled prism. It is inodorous, but has a mild alkaline taste, without any causticity.

E. L.—It is composed of one eq. of potassa (water and carbonic acid

prepared from potashes.—Pearl ash, D. Perlasche, G. Carbonate of potash, E. *Carbonate of potash, prepared from crystals of tartar; pure carbonate of potash.* Pearl-ashes or potashes are procured, by lixiviation, from the ashes of many trees and land plants. They are imported in large, deliquescent masses of a dirty bluish white colour, packed in barrels. They are principally brought from America, where they are prepared in very large quantity from the trees cut down in the clearing of land; purified by the processes mentioned below, they are converted into pure carbonate of potash.

I. Pearl carbonate of potash is met with in the form of coarse, yellow, crystalline grains, deliquesce, with an acrid alkaline taste.

C. C.—It is composed of one eq. of potassa and one of carbonic acid, combined with an equivalent and a half of water. It attracts moisture from the air, rapidly deliquescing and becoming liquid. By a red heat it is fused, but is not decomposed. It is soluble in less than its own weight of water at 60°, but is insoluble in Alcohol. It is highly alkaline, but not caustic.

[illegible] Carbonate of Potash may be [illegible] Pot. + Powder, G. coarse powder, and coal dusty, of each one part; mix with [illegible] and [illegible] it over in an open vessel. [illegible] and evaporate to dryness in a [illegible] stirring it [illegible] near the end of the evaporation, [illegible] powder without [illegible] the carbon powder [illegible] than [illegible] [illegible] of potassium for the carbonate is [illegible] before they can [illegible] [illegible] [illegible] [illegible] Pearl + Impure carbonate of potash. [illegible] dissolved water, [illegible] the carbonate of potash in the water and [illegible] [illegible] a proper vessel, and evaporate the solution, [illegible] the [illegible] [illegible] [illegible] [illegible]

the bicarbonate; but in consequence of its cupidity for water and [illegible] quite poisonous properties, it is not much used in medicine. In pharmacy it is employed for the preparation of [illegible] the bicarbonate, &c. When this salt has been taken in poisonous doses, the best antidotes are vinegar, lemon juice, or dilute [illegible].

U. S. & M. of Arm.—Gr. v. to gr. xx., largely diluted.—Formula: *carbonatis sodæ*, D.—*Liquor*, L. (Carbonate of potash [illegible] salts of tartar, D.), one part (fl. ʒss., L.); distilled water, 2 parts (fl. ʒj., D.); dissolve and strain. "Sp. gr. 1330." D.). A convenient strength for infants: tinct., drops, viii. to fl. ʒss. in milk or in some aromatic water.

Incomp.—Same as the bicarbonate; but sulphate of magnesia is decomposed by the carbonate.

Syns. of Arsenas, D. E.—Syns. of Subcarbonas, L.—*Subcarbonate of soda*; *Sesquicarbonate of soda*.

P. P.—Usually in the form of a fine, white powder, but sometimes it is met with in small, indistinct crystals; it is [illegible] has a mild alkaline taste.

C. P.—It is composed of one eq. of soda, two of carbonic acid and ten of water. It is permanent in the air; by a moderate heat the water and one eq. of carbonic acid are expelled, and it is reduced to the state of carbonate. It requires 12 parts of water at 60° for its solution, but a much less quantity of boiling water; in the latter it loses one fourth of its acid, and becomes the [illegible] bonate. The solution is faintly alkaline; it effervesces with [illegible] but does not precipitate with the salts of magnesia.

Pure.—Off. "Carbonate of soda two parts, water six parts, dissolve, and pass the solution in a proper apparatus by the aid of heat and gas evolved from the solution of white marble in dilute sulphuric acid, until a saturated solution of the gas and of it exists; then crystallize by cooling, [illegible] and above 110°, and crystallize by cooling. Mix [illegible] with the [illegible] ary, and preserve in a close vessel." Ellis. "Fill with fragments of marble a glass jar, open at the bottom, and furnished at the top, above the bottom [illegible] so as to keep in the marble without preventing the free passage of a liquid; connect the [illegible] substance already by a bent tube and cork with an empty bottle, and this [illegible] another with another bottle filled with one part of carbonate of soda and [illegible] of dilute sulphuric acid well diluted together; and fill up the [illegible] as much as the bottom of the bottle. Before closing the [illegible] jar in the top in diluted sulphuric acid, connected by [illegible] the whole apparatus is thus filled with carbonic acid gas, pour the [illegible] jar, and let the mixture act till most dissolving, or till you [illegible] the salt. Remove the [illegible] and when it is [illegible] and heat, set it [illegible] at 110°." Dunglison. "Carbonate of soda, ʒvj.; distilled water, ʒxij.; dissolve and strain. The [illegible] with the addition of [illegible] and the [illegible] a gentle heat, is raised and crystals [illegible]."

Adulterations.—The only one of importance is [illegible] or sesquicarbonate, and this is seldom existing; it may be [illegible] detected by the action of solution of corrosive sublimate, which gives a reddish-brown precipitate with a solution of the [illegible] in 40 parts of distilled water, if it contain as much as [illegible] fourth part of the carbonate.

Tests.—In the various forms of [illegible]

of acid and vomiting, as remedy is employed as frequently as the bicarbonate of soda. It is usually taken in solution with excess of carbonic acid. In lithæmia, and in gout and rheumatism, where there is excessive secretion of uric acid and the urates, it is not so well adapted as the potash preparations, for the salt formed with soda and uric acid is comparatively insoluble, being, in fact, the compound which is deposited in the joints of persons who suffer from repeated attacks of gout.

U. & M. or Ann.—Gr. c. to 3ss. dissolved in water.—*Aqua sodæ bicarbonatis sodata*, D. *Liquor* (*Aqua*, P.) *sodæ effervescens*, L. E. (Bicarbonate (carbonate, P.) of soda, 3j; water (distilled, L.), *by measure*, Oj. (Oij, L. E.)); dissolve; and, in a proper apparatus, pass into it a stream of carbonic acid gas (obtained from the solution of white marble in muriatic acid diluted with six parts of water, D.) until it is more than saturated; keep in well-stopped vessels.) The *soda-water* of the shops, the form in which the bicarbonate is most generally used, is met with in the shops, however, soda-water is seldom anything more than a simple solution of carbonic acid in water, not containing any carbonate of soda; this may be easily known by adding tartaric acid to the solution; when it has ceased to effervesce after being poured from the bottle, no further effervescence will take place, unless the alkaline carbonate be present. Dose, Oj. or Oij., two or three times a day. *Trochisci sodæ bicarbonatis*, L. (Bicarbonate of soda, 3ss.; pure sugar, 3iij.; gum-arabic, 3ss.; galvanic fluid; and with mucilage beat them into a proper mass for making lozenges.) In acidity of the stomach, *ad libitum*.

Incomp.—Acids; lime-water; muriate of ammonia; metallic salts, except those of magnesia.

Sodæ carbonas venale, sive, barilla, D. *Sodæ carbonas impura*, L. *Impure carbonate of soda; Barilla. Sodæ carbonas*, D. L. E. *Carbonate of soda.*—Impure carbonate of soda or barilla is obtained by burning to ashes several terrestrial plants which belong to the natural family Chenopodiaceæ, and which usually grow on the sea-shore. It is imported in the form of hard, grayish-blue, impure lumps or efflorescent, packed in barrels. It is chiefly brought from Spain, France, and the East Indies. It is only employed for yielding carbonate of soda by the processes mentioned below. In the present day, however, carbonate of soda is prepared on the large scale from sulphate of soda by a complicated process, the details of which will be found in all modern works on chemistry.

U. P.—Carbonate of soda occurs in large, transparent crystals, or fragments of crystals, the primary form of which is an oblique rhombic prism. They are inodorous, but have a disagreeable, alkaline, somewhat caustic taste. Sp. gr. 1·043.

C. P.—It is composed of one equivalent of soda, one of carbonic acid, and ten of water. It effloresces when exposed to the air, by loss of a part of the water of crystallization, which is expelled, and a white powder, still left, which again becomes moist if it be

[illegible] [illegible] [illegible] [

doubtful in the slender hope of the most active remedies will effect the purpose, and they should always be administered in connection with the specific remedies, the efficacy of which may first be ascertained. In the course of these remedies, however, it will frequently be necessary to assist the worms and exercise to employ means calculated to restore the digestive organs to a healthy action, and to correct that peculiar state of the system which promotes the generation of intestinal worms. The means best calculated for this purpose are, keeping the surface of the body clean by proper shedding a light but nutritious diet with a moderate use of common salt, but, at the same time, the administration of these must be with gentle aperients, and, if anæmia be present, the preparations of iron.

There is no topic upon which the profession is so fully charged with incredulity and palpable error, as it is with reference to the existence of diseases attributed to worms in the alimentary canal, by remedies denominated anthelmintics, to which the specific property of destroying worms is ascribed. It is well known that the existence of living worms in the stomach and bowels is often found to be consistent with otherwise sound health, and that they often spontaneously escape from the body per os and per anum, when no previous evidence of their existence has been discernible, and when no other disturbance of health can be detected. They are often observed in subjects who partake freely of unripe fruit, and these worms are of the variety called lumbrici, and they are often found in the bowels of persons who have been killed when in perfect health. Still, however, this same kind of worms is found in children and persons of bad general health, and sometimes in such numbers as to become a source of disease, and require remedies for their destruction and removal. In most cases, however, of this character, the worms are often the effect of previously existing disease, and by no means its primary cause, notwithstanding their presence may now be the only apparent source of mischief. Especially will it be found in children that where digestive organs have been impaired for a long time and poor health (call and bodily) before any suspicions of worms could be gathered from their symptoms. And in a multitude of examples, anthelmintics, supposed to be specific in their action, are given for weeks and months, when there is not only no proof of the existence of worms, but when the abstinence history of the patient proves that he has only suffered from the suspicion of being troubled with worms, while his malady has been all the while of another and a different character. The discovery is, however, very often delayed until all the symptoms of this class and many more have been tried in vain, and until numerous doctors, and quacks have dragged the patient to nauseating over worm mixtures and vermifuges of every variety.

The author has judiciously stated in the preceding paragraph, that the action of anthelmintics is "rarely necessary," even when there are worms. This is true, as far as the worms are concerned; some time happens to be lost in the mean time, and the patient is not

taken "an ounce of garlic swallowed whole;" or an equal quantity of "raw *Shrimps*," and followed down with a directional draught of "two ounces of spirits of turpentine," will be found to confess that their action upon the stomach and bowels has been "merely temporary," and is often considered to find permanently permanent, even when taking these with the addition has only proved, as a direct loss to the satisfaction of the that there are no worms in the case, and that anthelmintics are called for.

The truth is, that no certain diagnosis of worms—that is, appearance in the discharges is worthy of confidence, and without this ocular proof, the use of anthelmintics is of questionable propriety. And even when the symptoms of irritation lead to the suspicion of worms, to "restore the healthy tone of the digestive organs," and correct the morbid state which "predisposes to generation of intestinal worms," these are the true indications. It need scarcely be said, that the medicines arranged under this class are not those best adapted to this purpose, but are expressly pointed out by the author in the last sentence of the preceding paragraph.

It is only when the presence of worms is definitely ascertained that any of the specific anthelmintics, as they are here called, are at all adapted to the case, and then only for merely "temporary" purposes, and quickly followed by cathartics, whose true purpose and property is synonymous with their specific virtue. The turpentine will be found to be the most successful of any, generally in lumbrici, and in ascarides, in which latter case it should be used as an enema, as this species only infest the rectum.]

ALLIUM SATIVUM, D. L. E. *Garlic.* A native of Italy, Sicily, and the South of France, commonly cultivated in our gardens, belonging to the class *Hexandria*, order *Monogynia* in the Linnæan arrangement, and to the natural family *Liliaceæ*.

[illegible]

P. P.—The bulb, as it is termed, consists of several small bulbs called cloves, grouped together within a common membranous covering; when dry, of a dirty whitish colour and a somewhat pearly; the cloves, which have each their proper covering, are white and succulent, of a strong, disagreeable, peculiar odour, and a acrid, pungent taste.

E. P.—The [illegible] consists of an acrid volatile oil, [illegible] a mucilaginous matter, an animal [illegible] and a sulphurine matter; on distilled [illegible] with water, it yields its oil, which is heavier than water, of a yellowish colour, and a very penetrating odour; it contains some sulphur.

E. E.—Garlic, though now seldom employed as a [illegible] in regular practice, is an excellent remedy in secondary [illegible] when [illegible] with great success by [illegible]

the mouth and of clysters, and, at the same time, causing friction to be made with a hard brush over the abdomen.

D. & M. or Ann.—In substance, 3ss. to 3j. swallowed whole, or made into pills with soap; of the expressed juice, m. xx. to m. xxx. on sugar; of an infusion prepared by infusing 3ss. of the herb in fʒij. of water or milk, fʒij. to fʒiij. two or three times daily.—*Syrup of Garlic* (Garlic, one part; boiling water, eight parts; sugar, sixteen parts); dose, fʒss. to fʒj.

Artemisia Santonica, Semina, D. *Worm seed.*—The substance which is met with in the shops under this name is imported from Barbary and the Levant, and appears to be a mixture of fragments of flower-heads and their footstalks. It is incorrectly stated by the Dublin College to be the seeds of the plant above named.

P. P.—The fragments are smooth, of a greenish-yellow colour; have a strong, aromatic odour, and a bitter taste.

C. P.—It contains a bitter, resinous, extractive matter, and an acrid volatile oil.

Th. E.—Not much employed now in this country, though still considered a very excellent anthelmintic in several parts of the Continent. It is used in cases of ascarides and lumbrici.

D. & M. or Ann.—Gr. xx. to gr. xxx., made into an electuary with honey, may be given to children night and morning, followed by a brisk purge.—*Vermifuge powder*, P. (Worm-seed, Cowhage roots; wormwood; tansy; scordium; senna; and rhubarb, of each equal parts); dose, 3ss. to 3j.—*Vermifuge balls*, P. (Worm-seed, gr. xij.; calomel, gr. vj.; camphor, gr. vj.; syrup, q. s. for one ball). Dose, one to two daily.

Cheiranthus Incanus, Cortex, D. Asimina triloba (Kunth). *Cabbage-bark tree.* A native of Jamaica, belonging to the class *Dodecandria*, order *Dodecagynia*, and to the natural family *Leguminosæ*.

[illegible]

P. P.—In rather thick fibrous pieces of a brownish-ash colour. It has a heavy odour, and a mawkish bitter taste; is pulverulent, the powder resembling jalap.

C. P.—It contains a brownish-yellow, crystalline, very bitter, efflorescent substance, which has been named *leucotin*, and on which its medicinal properties depend, colouring matter, gum, fecula, woody fibre, &c.

Th. E.—A powerful anthelmintic, especially in cases of the lumbrici; but in consequence of its frequently producing vomiting, hypercatharsis, and even delirium, it is now seldom employed; although used with the caution, however, it is an excellent vermifuge. Dr. [illegible] says he has found it peculiarly efficacious when combined with calomel.

D. & M. or Ann.—It should be commenced in small doses; of the powdered bark, gr. xx. to gr. xxx.—*Decoction* [illegible]. D. [illegible]; water, lbj.; boil down to lbj.

and to the powdered leaves add syrup of orange, ℥ij. Make into a bolus, for a child. Dose, as Cusso.—If there be tenesmus, or other disagreeable effects arise from its use, warm gruel must be first given, then castor oil, followed by opium.

Corallina Pulmonarioides.—Corallina Muscoides.—A species of the genus of the Melobesiaceæ, class Cryptogamia.—The substance known in the shops as Corallina muscoides consists of a number and a great variety of Algæ; Decandolle enumerates no less than fifty-seven species.—A small, though the most essential part of the mixture, is the plant above named.

P. P.—Corallina muscoides is met with in commerce, consisting of brownish filaments mixed with fuci, conferva, ceramia, hedysarum, sphærococcus, and grounded articulations; it has a marine odour, and a saline, bitter taste.

C. P.—It consists of vegetable jelly, the nature of which is not well known, vegetable fibre, salts of lime and soda, a trace of iron, manganese, and silica. Its active principle is soluble in water.

Use, &c.—Corallina muscoides has been used by the natives of Corsica for several centuries, as a remedy for intestinal worms; it appears to be useful in cases of lumbrici.—Ramond speaks highly of its anthelmintic properties, which he ascribes to the oil which it contains.

D. & M. ut Ante.—In powder, gr. x to xl, made into an electuary with honey or treacle.—*Infusion of Corallina muscoides*, (Ph. Corsica), (Ph. Lond.); Dose, ʒij to ʒiss, as a cupful of water or milk.—*Jelly of Corallina muscoides*, (Ph. Corsica) made as gelatine, ʒij; white wine, ʒiij; sugar, ʒss; boil and strain. Dose, ʒj or ʒij.

Mimosa insularis, L. L. [and U. S. P.] *Dividivi tree*, *Libidibi*, *Coulebi*.—A native of the West Indies, belonging to the class *Polygamia*, order *Monœcia*, and to the natural family *Leguminosæ*.

B. U.—A tanning fruit, having various names, such as [illegible] in Africa, in various countries recorded by [illegible] to the [illegible].

P. U.—The spikelets, or leaves of the legumen.

P. P.—The entire legumen, with the bony [illegible], are [illegible] imported; they are shaped like the letter S, or a [illegible], about from two to four or five inches long, thinly scattered with small brown bristles, or hairs, which, examined by the microscope, appear finely serrulated and curved towards the point; within are the separate cells and solitary abortive seeds; the shell very hard, [illegible] brittle, and supported with internal keel and ribs, [illegible] and pendent.

C. P.—The bony outside [illegible] tannin and extractive principle.

Use, &c.—The [illegible] of powder, or the infusion, which [illegible] a compound [illegible]; the [illegible] [illegible] [illegible]

...on. It is chiefly serviceable in cases of ascarides and lumbri-... having but little effect on the tape-worm; indeed, by many ...ioners it is esteemed, and not without reason, as the best ...ge for the lumbrici.

D. & M. or Adm.—The legumes are dipped in sirup, and then ...ed, so as to remove the scale; this process is repeated with ...legumes until the sirup acquires the consistence of honey; ...this a teaspoonful is given to a child, or a table-spoonful to an ..., for three successive mornings before breakfast, and the last ...followed by a brisk purge.

Nephrodium filix mas, E. Aspidium filix mas, D. L. *Male Shield Fern.* Indigenous; belonging to the Linnæan class and ...*Cryptogamia Filices*, and to the natural family *Filices*.

...—Rhizome, or underground stem, large, tufted, scaly, producing in spring ...rooted crosiers of leaves, petiolate, with oblong, serrated, obtuse leaflets.

...A. M. or Pulv.—The rhizome, it should be dug up in summer, cleared of ...fibres, &c., but not washed, and dried quickly and thoroughly in the open air ...from heat in the shade; the tufts, and those parts of the root-stock which are ...internally, should alone be kept; they should be reduced to powder immediately ...preserved in well-stopped bottles; the druggists' stock should be renewed annually, as in two years it loses its medical properties.

...P.—The powdered root is of a greenish-yellow colour, of a ...disagreeable odour, and a nauseous, bitter, somewhat astringent taste.

C. P.—It contains a small portion of volatile oil, on which its anthelmintic properties seem to depend; some fixed oil, fecula, uncrystallizable sugar, gum, and woody fibre.

Ps. E.—The powder of the male fern-root is perhaps the most efficacious anthelmintic we possess in the treatment of tænia; and as an indigenous remedy, it is especially worthy of attention. Cloquet, however, in his treatise on intestinal worms, states that, "though an excellent remedy against *Bothriocephalus latus* (the broad worm of the Swiss), it is not so efficacious against *Tænia solium* (the tape-worm of this country)." It acts as a poison to the worms, as they are discharged dead in all cases.

D. & M. or Adm.—Powder, ʒi. to ʒij.; it should be given in the morning early, and followed in two hours afterward by a brisk purge. *Oleum Filicis Maris*, Dr. Peschier. (The tufts of the rhizome are reduced to a moderately fine powder, exhausted with ether, and the ethereal liquor distilled.) Dose, min. xx. to min. lx., dropped on sugar, or made into an emulsion with almond mixture; half of this dose is given at bedtime, and the remainder on the following morning; if it do not purge, an active cathartic should be given in the afternoon of the same day.

Petroleum Barbadense, D. L. E. *Petroleum; Rock oil; Barbadoes tar.* A mineral production, found floating on the waters of springs and lakes in several of the West India islands.

This substance, though still retained in the British pharmacopœias, is altogether discarded from practice. It was formerly em-

played in cases of tape-worm, both inwardly, in form of a decoction, and externally, by friction over the abdomen.

PUNICA GRANATUM, GRANATE TREE, *D. Granate tree*; *F. Pomegranate bark*; *Bark of the root of Punica Granatum*. A native of the North of Africa, introduced into the South of Europe, where it now grows freely; belonging to the class *Icosandria* of the Linnæan arrangement, and to the natural order *Myrtideæ*.

D. C.—A small handsome tree, growing to the height of twelve feet, with numerous bark, and smooth leaves on short footstalks; a prickle or two at the extremities of the young branches, spindle-tree scarlet flowers which are succeeded by the orange-like fruit, crowned with the hardened persistent calyx.

P. P.—Pomegranate bark is usually met with in short quills, or portions of quills, of a grayish-yellow colour externally, reddish internally, brittle, not fibrous, with a faint odour, and an astringent taste.

C. P.—According to Meissner's analysis it consists of tannin, gum, a separable substance (part of which is soluble in alcohol, and part in water), the former crystallizable, the latter having the characters of Mannite), and free gallic acid in large quantity.

Adulterations.—The root bark of the common barberry (*Berberis vulgaris*), and of the box-tree (*Buxus sempervirens*), are said to be sometimes substituted for that of the pomegranate; the latter is easily detected, as neither of these substances, although very bitter, possesses the least astringency.

TR. E.—The bark of the root of the pomegranate is an excellent vermifuge in cases of tape-worm, and is much employed in various parts of Europe, but it is chiefly used in India. It is safe and scarcely ever to fail, if properly administered; some precautions are more that it should not be employed unless joints of the worm have already come away naturally.

D. & M. ad Ann.—Two ounces of the bruised bark are macerated for twenty-four hours in two pints of water, then boiled down to one half, and filtered; this is given in three doses, with an interval of half an hour between each dose, vomiting frequently ensues after the first or second dose; but this should not prevent the administering the third. Soon afterward the patient passes copious stools, in which joints of the worm are expelled. The medicine may be occasionally repeated for four or five days after fragments of the worm have ceased to come away.

DARLINGTON, L. V. *Crandallia* [D. & P. *Vandyke*.] *Bract* of the *Senna officinalis*, L.; *of Veratrum Sabadilla*, of *Hedeoma pulegioides* and probably of other *Melanthaceæ*. L.; *of Asarum Canadense*, L. *Lamiacæ*. A native of Mexico, belonging in the Linnæan system to the class *Monandria* of the Linnæan arrangement, and to the natural family *Heteropteræ*.

B. C.—A herb, consisting of numerous green stems, [illegible] with ovate or lanceolate leaves, which are [illegible] by a number of small white flowers, succeeded by numerous [illegible]

P. P.—The fruit consists of three follicles, oblong, adherent at the base, about half an inch in length; they are composed of a thin, yellowish, elastic membrane, containing from one to three shining black seeds; the seeds have little odour, but when powdered and snuffed into the nostrils, they produce violent sneezing and discharge of mucus: they have an acrid, intensely bitter taste, which is very permanent.

U. P.—Cevadilla consists of fatty matter, *cevadic acid*, wax, *veratria* combined with gallic acid, yellow colouring matter, and gum.

Th. E.—Although possessed of highly poisonous properties, cevadilla has been employed internally as an anthelmintic with much success in cases of tape-worm and of ascarides; its use has been hitherto almost entirely confined to the Continent, and from the numerous instances of its successful employment recorded by different practitioners, it appears deserving of a high character as a vermifuge.

D. & M. *or* Adm.—Powder, gr. iij. for eight successive mornings fasting, followed on the ninth day by an active purge, in cases of taenia.—*Flavour of cevadilla* (Cevadilla, ʒij., water ℥v; milk, ℥iij.; the cevadilla is boiled in the water until it is reduced to seven ounces, then filtered, and the milk added). To be administered in cases of ascarides.

Spigelia, L. E. Spigelia Marilandica, Rand. D. *Carolina pink; root of Spigelia Marilandica*.—A native of the United States, belonging to the Linnean class and order *Pentandria Monogynia*, and to the natural family *Gentianaceæ*.

R. C.—A perennial root, sending up numerous simple stems, bearing, in the month of July, numerous crimson flowers, in racemes.

T. P.—Usually met with in bundles about twenty inches long, consisting of numerous slender, yellowish-brown fibres, proceeding from a small, dark-brown rhizome: they have a faint odour, and a sweet, somewhat nauseous taste.

U. P.—The root consists of acrid resin, tannin, bitter extractive, and woody fibre, with a trace of fixed oil.

Th. E.—Spigelia root, in consequence of its being much more active in the recent state than when dried, bears a higher character as an anthelmintic in America than in Europe. It is the most efficient vermifuge in the United States for the expulsion of lumbrici, possessing, however, little or no powers over any other species of intestinal worm.

D. & M. *or* Adm.—In powder, gr. x. to gr. xx. for children. *Infusum spigeliæ*, U. S. (Spigelia root, ʒss., boiling water, ℥vij.; macerate for two hours and strain.) Dose, ʒss. to ʒi. for a child; double this quantity for an adult. However administered, it ought to be always followed by a strong mercurial purge.

Strychnos, D. L. E. *Poison of Tie*.—The seeds found in various parts of the East Indies, Africa, and South America, and in the East Indies.

P. P.—Metallic tin is of a bluish-white colour, brilliant, soft, and malleable, with but little tenacity: it emits a slight peculiar odour when rubbed. Sp. gr. 7·3.

C. P.—It melts at 442° F.: if the heat be increased, it oxydises rapidly, and at a red heat burns brightly: it dissolves slowly in dilute muriatic acid, but rapidly if the acid be strong and boiling: nitric acid, slightly diluted, acts on tin with great violence; heat is produced, orange fumes disengaged, and pure peroxide of tin is formed.

Prep.—The metal is separated from the impurities which exist with it in the ore by smelting and liquation. For medical purposes, it is reduced to powder by agitating it while in a state of fusion in a wooden box, the inside of which has been rubbed with chalk, in a mortar previously heated, triturating briskly as it cools, E.), and separating the finer particles by means of a sieve.—*Dub.*, *Edin.*

Adulterations.—Pewter filings are sometimes substituted for tin filings in commerce: and Christison says that lead powder is not unfrequently sold for powder of tin. These adulterations may be detected by first acting on the specimen with nitric acid, so as to convert it into the peroxide, boiling the powder thus obtained with distilled water, when, should the tin be pure, the water will not precipitate with solution of sulphate of magnesia.

Th. E.—Powder of tin is a most effectual anthelmintic, especially for children, in cases of lumbrici; not so useful in cases of ascarides, and producing little or no effect in cases of tænia. It appears to act mechanically, and, consequently, its administration should be always followed by an active cathartic.

D. & M. of Adm.—ʒss. to ʒi. made into an electuary, with an equal quantity of honey or treacle.

Tanacetum vulgare, folia, D. *Common Tansy.*—Indigenous; belonging to the class *Syngenesia*, order *Polygamia superflua*, in the Linnæan arrangement, and to the natural family *Compositæ*.

B. C.—Stem two to three feet high, bearing a corymb of yellow flowers.

P. P.—The whole plant has a disagreeable, camphoraceous odour, and a nauseous, bitter, aromatic taste.

C. P.—The only important constituents of the plant are bitter resin and volatile oil.

Th. E.—Though rarely employed in regular practice, it is frequently administered as a vermifuge with much benefit as a domestic remedy; it is only applicable for cases of lumbrici.

D. & M. of Adm.—In powder, ʒi. to ʒi. *Infusum Tanaceti* (leaves, ʒij.; boiling water, Oj.; macerate for an hour). Dose, fʒi. or fʒij.

Terebinthinæ oleum, D. L. E. *The volatile oil distilled from the liquid resinous exudation* (Terebinthina vulgaris, D. L.) *of various species of Pinus and Abies* (Edin.). *Of Pinus sylvestris* (Dub., Lond.). *Oil of Turpentine; Spirits of Turpentine.*—The trees from which the varieties of common turpentine met with in commerce are procured are inhabitants of the forests of the co

species of Europe and North America, and most of them are cultivated in the British Isles; they are placed in the natural family Coniferæ, and in the Linnæan class and order *Monœcia Monadelphia*.

[illegible]

P. P.—Oil of turpentine is a transparent, colourless, limpid fluid: it is peculiar, penetrating, balsamic odour; and a pungent, bitter, [illegible] taste. Sp. gr. 870 at 50° F.

C. P.—It is composed of C^{10} H^{8}. It is very soluble in ether, less so in alcohol, and very sparingly soluble in water. Exposed to the air, it gradually absorbs oxygen, thickens, and becomes yellowish. It boils at 314°, and cooled down to—17° it deposites white crystals *camphor*, which are heavier than water. Oil of turpentine is very inflammable, burning with a heavy, yellowish flame, and much smoke; in chlorine gas it takes fire spontaneously.

Not liable to adulteration.

TH. E.—As the most effectual remedy we possess for the expulsion of tape-worm, oil of turpentine stands deservedly in high repute. It operates as a specific poison to the parasite, causing its immediate death, and afterwards, in consequence of its cathartic properties, expelling it from the body. It has also been used with great benefit in the form of enema for lumbrici in the rectum.

D. A. M. et Ann.—*As an anthelmintic*; for infants [illegible] to fiij; for children [illegible] to ij. It may be given either floating on the surface of milk, or made into an emulsion with gum-water (of which it requires equal parts), or with yolk of egg (one to every ounce).

Enema Terebinthinæ. D. L. E. (Common turpentine, 3ss. (oil of turpentine, E.), L. E.); yolk of one egg (a sufficiency, L. E.); water (or a decoction not exceeding 10ij. D.), (decoction of barley, L.), fʒx. (fʒviij. L. E.); rub the oil and the yolk together, and add the water gradually. D. E.—Mix, L.).

CHAPTER III.

ANTISPASMODICS.

Antispasmodics, or those medicines, are medicines which [illegible] and relax or moderate spasmodic action—pyrexia. This [illegible] of the system depends on an [illegible] power, [illegible] presumed to be owing to different sections of [illegible] that is

successful treatment will very frequently depend on the employment of remedies calculated to remove the exciting cause, or source of irritation by which the spasmodic affection is produced. It follows, therefore, that under peculiar circumstances the remedies which will be found most successful in relieving spasm must be derived from very different divisions of the Materia Medica; and thus the term *Antispasmodic* will become applicable to a narcotic, a sedative, a stimulant, a counter-irritant, or a tonic. There are, however, certain medicines which appear to exert a direct control over spasmodic action independent of any influence upon its exciting causes, and these will form the subject of our inquiry in the present chapter.

[The foregoing remarks are discriminating and judicious, and yet an allusion is made to three of the most potent remedies which we at present possess among its resources for subduing spasm, and upon one which neither of those here named can always be trusted to. *Ether* is among our most useful and efficient antispasmodics, and even when given only in exceeding dilute ether, nothing being carried far enough to excite vomiting, by exciting the stomach first, upon the contraction of which spasmodic diseases depend, will afford speedy relief. But the *lancet* is our most certain, speedy and effectual antispasmodic, and a *full* bleeding drawn from a large orifice, the patient being placed in an erect position so as to favor syncope, will be found best adapted to relieve those violent and rapid spasms which endanger life, and even when all the remedies have been used in vain. The *warm bath*, of which we have already in spasm no mention is made, though it may be called "antimodical," is nevertheless an agent of great importance when employed, and invaluable as an auxiliary in severe and protracted spasm, especially when the bowels are involved in the disease.]

ASSAFŒTIDA, U. S., E. *Gummy, resinous production of Ferula assafœtida; probably, also, of Ferula Persica* (Willd.)—A native of Persia, especially the provinces of Khorassan and Laristan. It belongs to the Linnæan class and order *Pentandria Digynia*, and to the natural family *Umbelliferæ*.

R. G.—The tree is long-lasting, of the thickness of a man's leg, bearing clusters of white and juicy blossoms; of a powerful alexipharmic virtue; and producing seeds [seeds] like those of fennel, but larger; and often some years it bears [bears] no flowers with leafless stumps, which is also the case with [with] many others. The whole plant abounds with a milky juice, which is collected in the following manner. The whole plant is cut off at the root in the spring, and [and] left to wither.

R. or Stem.—When the plant is four years old, the root thereof are completely cut in June when arrived to the top of the root is about an inch, and [and] left to remain for the space of a month or six weeks, in which time it will [will] be found to have swelled to the size of a man's leg, and [and] then is cut off, and a hole, about the size of a common apple, made in the middle of the root, and the same covered [covered] with a piece of the root which was cut off, and [and] left to remain for the space of a month or six weeks, when the juice is completely exhausted. The root is then taken up, and [and] the juice collected in earthen [earthen] pots, which are covered with a piece of leather, and [and] left to remain for the space of a month or six weeks, when it is fit for use.

F. P.—A gum-resin is met with in commerce in irregular masses [masses] of a pale to dark yellow color, sometimes [sometimes] with a greenish tint, [tint,] occasionally [occasionally] white, generally [generally] mixed with [with] foreign matters, [matters,] and [and] having a strong [strong] alliaceous odor, especially [especially] when [when] rubbed or heated. [heated.]

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all hysteric forms of hysteria. It is prepared by burning wood under a small flue, and collecting the soot which is deposited in the chimney. It consists of a peculiar extractive matter called *pyretia*, some acetic acid, acetates of soda, potash, magnesia, and ammonia, resin, &c. It yields its active properties partly to water, but more completely to alcohol. The preparations of soot that have been employed are as follows: *Decoctum Fuligenis* (wood soot, ℥ij.; boiling water, Oss.; boil down to Oj. and strain). Only used for external application to chronic eruptions of the scalp, and to foul ulcers.—*Tinctura Fuligenis* (wood soot, ʒij.; assafœtida, ʒss.; proof spirit, ʒxxxij.; digest for three days and strain). Dose, ℥ss. to ʒij.—*Spiritus Fuligenis* (wood soot, one part; proof spirit, two parts; water, fifteen parts; distil four parts). Dose, min. xx. to ʒss.

Galbanum, D. L. E.—*Concrete gummy resinous exudation of an unascertained plant (probably of a species of Opoidia.* E.—*of Bubon Galbanum.* D.—*of Galbanum officinale.* L.). It is imported from India, and from the Levant.

S. P.—It occurs in both tears and in lump; the tears are globular or irregular, about the size of a pea, usually agglutinated into masses of a pale greenish-yellow colour, somewhat translucent, having a strong peculiar odour, and an acrid, disagreeable, bitter taste; the lump variety is of a darker colour, rather opaque, with more powerful odour and taste; when exposed to cold, both kinds become brittle, and may be readily reduced to powder.

T. P.—Galbanum consists chiefly of resin and gum, with a small proportion of volatile oil, and some bassorine. It is nearly entirely soluble in proof spirit, and partially so in rectified spirit and in water; it forms an emulsion with water, and is rendered softer, but not melted by heat.

Th. E.—Galbanum is employed in the same cases as assafœtida, with which it is generally combined, being less energetic than that substance. It is more frequently employed externally, as a stimulating epispastic, in consequence of its consistence being better suited for plasters.

D. & M. or Admr.—In substance, either in pill or emulsion, gr. x to ʒss.—*Tinctura Galbani*, D. (Galbanum, in small fragments, ʒij.; proof spirit, *by measure*, ℥ij.; digest for seven days and filter.) Dose, ʒss. to Oj.—*Emplastrum Galbani*, D. (Litharge plaster, ℔j.; galbanum, ʒss.; yellow wax, ʒiv.; add the litharge plaster to the wax in the melted galbanum, and then melt all together with a moderate heat.)—L. (Galbanum, ʒvij.; lead plaster, ℥ij.; common turpentine, ʒx.; resin of the spruce fir, powdered, ʒij.; melt first the resin, then the plaster melted with a slow fire in the galbanum and turpentine melted together, and mix them all.) Applied externally, spread on leather.

Moschus, D. L. E.—*Inspissated secretion from the preputial follicles of Moschus moschiferus; Musk.* The musk deer, an inhabi-

stant of the mountains of Eastern Asia, especially frequenting the steppes of the Altai, the banks of the River Irtysh, Mongolia, Thibet, and Dauria, as far as Tangut, is placed by Cuvier in the class *Mammalia*, order *Ruminantia*. In the interval between the anterior part of the perpendicular incisors, is situated a small sac, filled with a yellowish fluid, which, in the dry state, concretes into musk.

P. P.—The musk-bag, or, as it is commonly called, musk-pod, is somewhat oval, about ¾ inches long and 1½ inches broad, compressed, and bare on one side, somewhat convex, and covered on the other with brownish-yellow hairs on the other, containing from one to two drachms of musk. Musk is in the form of small unctuous grains of a reddish-brown colour, mixed with whitish hairs, of like a strong peculiar, diffusible, very persistent odour, and a bitter, somewhat acrid taste.

C. P.—Musk consists of ammonia, stearine, elaine, cholesterine, acid oil combined with ammonia, volatile oil, an acrid resin, a gelatine albumen, ferrum, carbonaceous matter, and water (*Vauquelin and Hunefeld*). It yields its active principles partly to water, but more completely to alcohol.

Adulterations.—Grain musk is usually adulterated; dried calf's blood is employed for this purpose. It may be detected by adding to an infusion of the suspected drug solution of corrosive sublimate; if it be genuine, it will not precipitate. Factitious musk-bags are said not to be uncommon in commerce.

Th. E.—Musk is not much prescribed now, in consequence of its high price; it is, nevertheless, a stimulating antispasmodic of great power, and is administered with excellent effect in hysteria, chorea, and in the convulsive tendinous and hiccough of fevers and other diseases assuming a typhoid type. In cases of hysteria of long standing, so nearly allied to epilepsy as to be scarcely distinguishable from it, I have obtained very beneficial results from the employment of musk.

D. & M. or Ann.—In substance, gr. x to gr. xx.—*Mistura Moschi*, L. (Musk, gum-arabic, sugar, of each, 3ij; rose-water, ℥viij. Rub the musk with the sugar, then with the gum, the water being gradually poured in.) Dose, ℥ij to ℥iij.—*Tincture of Musk*, L. (Musk in powder, ℥ij; rectified spirit, ℥x. Macerate for seven days and filter.) Two musk for ordinary use.—*Tinctura Moschi comp.*, L. (Musk, 8 parts; valerian, 16 parts; cinnamon, 16 parts, mix.) Dose, 30 m. to gr. xx.—*Musk pills*, Pharm. L. (Musk, 8 parts; myrrh, 8 parts; sugar of lead, 1 part; syrup, q. s.) Dose gr. xx to ℈ss.—*Lobb's pectoral pills*, Pharm. L. (Musk, extract of opium, of each, 3ij; divide into 72 pills.) Dose, No. 2-4.

Officinal, U. L.—*Tincture of Opium*, Pharm. L. Dose, ℥x to ℥xxx. D. This plant is a native of the Caucasian Mountains. It belongs to the class and order *Pentandria Digynia*, and to the natural family *Umbelliferæ*. [illegible]

a somewhat hot but clear odour, with a bitterish, acrid taste; it contains chiefly oil, gum and resin, with a small quantity of volatile oil, starch and extractive matter. This substance is quite obsolete in medical practice. It was formerly employed in the same cases as wood soot and gallanum, which it resembles in its physiological properties.

Gen. Ch. *Ruta sativa*, Tourn., D. *Ruæ herba* (and species *graveolens*) of *Rutæ graveolentes*.—A native of the South of Europe, cultivated in our gardens. It belongs to the natural family *Rutaceæ*, and to the Linnæan class and order *Decandria Monogynia*.

P. & C. P.—Although the leaves only are ordered by the Dublin and London Colleges, the entire plant is met with in the shops. It has a strong, disagreeable, somewhat aromatic odour in the fresh state, much of which is lost in drying, and a bitter, acrid, disagreeable taste. Its medicinal properties depend on volatile oil and bitter extractive; the former, *Oleum Rutæ*, is officinal in the Dub. & Edin. Pharm.; it is obtained by distilling the fresh herb with water. Oil of Rue is of a rich yellow colour, becoming darker by age; it has the peculiar odour of the plant in a marked degree, and a bitter, acrid, warm taste; its sp. gr. is 0·911. Rue yields its active properties to boiling water, but by decoction the volatile oil is dissipated.

T. E.—Rue is a stimulating antispasmodic of some power, although not much employed in the present day. It has been administered with benefit in the spasmodic colic and general convulsions of children; and, in the hands of some practitioners, is said to have proved useful in hysteria and hypochondriasis and epilepsy.

Dub. Pr. of Adm.—Preparations of the fresh herb should always be employed, as the infusion (prepared by infusing ʒi. of the leaves in Oj. of boiling water in a covered vessel, for an hour) or the oil; the dose of the former is ʒj. to ʒij.; of the latter, min. j. to min. iij. in some agreeable syrup.—*Extractum Rutæ*, D. (Prepared as the simple extracts.) A useless preparation, the volatile oil being dissipated in the process. Dose, gr. v. to gr. xx.—*Confectio Rutæ*, D. *Confectio Rutæ*, L. (Rue dried, ℔j.; caraway, bay berries, of each, ℥ij.; angustura, ʒss.; black pepper, ʒj.; dry powdered honey, ℔vj. "Rub together as a very fine powder, and after adding the honey, mix all well." L.—"Rub the dry ingredients together to a very fine powder, and preserve them; afterwards the confection is to be used, and the honey to them, and mix them all." L.) Only used in enemas in the spasmodic affections of infants and children. From ʒj. to ʒij. is added to ℥iv. or ℥vj. of the gruel.

Rue, essence of, E. L.—*Oleum rutæ*, obtained from an ammoniacal salt (spirit of hartshorn) by distillation.—Imported from the Levant.

P. C.—A pungent, aromatic, greenish-yellow oil, of a dark brownish-

yellow colour, consisting of [illegible]
it has a fetid odour, weaker than asafœtida, and a bitter, acrid
it breaks with a horny fracture.

C. P.—According to the analysis of Pelletier [illegible]
gum of gum-resin, volatile oil, benzoic acid, and [illegible]

Th. L.—Sagapenum promotes [illegible]
weaker than asafœtida; it is, consequently, [illegible]
of use.

D. & M. or Asm.—In substance, given in the form [illegible]
to gr. xx.—*Pilulæ Sagapeni comp.* L. (Sagapenum, [illegible]
Asa., syrup of ginger, q. s.; beat together until they are [illegible]
ted.) Dose, gr. v. to gr. xx. A useful purgative and [illegible]
in the flatulent colic of dyspepsia.

Succinum, D. L. *Amber.*—An oil (*Oleum Succini*) [illegible]
(*Acidum Succinicum*), are still retained in the Dublin, [illegible]
in the London Pharmacopœia, but, although once highly [illegible]
in medicine as antispasmodics, they really possess very [illegible]
dicinal properties, and are so little employed in the present day, that
we may very well omit any account of them here.

Valerianæ, D. L. E. *Root of Valeriana officinalis.*—A [illegible]
genous plant, belonging to the class *Triandria*, order *Monogynia*,
in the Linnæan arrangement, and to the natural family [illegible]
æeæ.

B. C.—The root is [illegible]

P. P.—The root, which should be dug up in autumn, when the
leaves have decayed, or in spring before the stem rises, consists of
a short tuberous root-stock, and numerous rootlets [illegible]
six inches long, yellowish brown externally, whitish internally, of a
strong, persevering, aromatic odour, and a bitter, acrid, somewhat
somewhat aromatic taste. Cats are remarkably fond of the plant. The
roots of these plants which grow on the [illegible]

C. P.—It consists of woody fibre, resinous extractive, resin, and a little more than one per cent. of
oil; a peculiar acid has also been [illegible]
which has been named valerianic acid. [illegible]
ether to both water and rectified spirit. [illegible]
valerian completely removes the odour, which may be restored by the addition of valerianic acid.

Th. L.—Medical practitioners differ much as to [illegible]
powers of this substance, it being generally [illegible]
of little virtue. [illegible]
I employed it [illegible]
have at the same time [illegible]
the dose be increased, [illegible]

D. & M. [illegible]

U. L. [illegible]

(℞. Ferri sulphatis 3ij; aquæ destillatæ ℥iij; acidi sulphurici ℥ij.) Dose, ℥ij to ℥iv.—Tinctura Ferri muriatis, U. (Vulgo, tinctura ferri muriatici; ℞. Ferri muriatis 3ij; aquæ destillatæ ℥iv; spiritus rectificati ℥viij.) Dose, ℥ij to ℥iv.—Tinctura Ferri muriatis Ætherea, U. (Vulgo, tinctura ferri muriatici ætherea; ℞. Ferri muriatis 3ij; spiritus rectificati ℥iv; æther sulphuricus ℥iij.) Dose, ℥ij to ℥iv.—Tinctura Ferri muriatis Aromatica, U. (Vulgo, tinctura ferri muriatici aromatica; ℞. Ferri muriatis 3ij; spiritus rectificati ℥iv; olei cinnamomi ℥ij; olei myristicæ ℥ij.) Dose, ℥ij to ℥iv.

CHAPTER IV.

ASTRINGENTS.

Astringents may be defined, substances which produce contraction and condensation when they come in contact with living matter. The more immediate effect of astringents is to diminish secretion and excretion; ultimately they exert a tonic influence on the human body. Hence, then, they appear to be very nearly allied to tonics; indeed, in many instances the most powerful tonics will be obtained from the division astringents. Much difference of opinion exists as to the *modus operandi* of this class of remedial agents. Since the time of Cullen, this has been generally explained by a reference to their action in *tanning*; or the astringent substance, as a peculiar chemical action, hardens and condenses animal matter, operates as astringents on the living system. This hypothesis may, to a certain extent, hold good as to the local action of astringents when applied to a mortally secreting surface; that is to say, they act by constringing the extreme vessels of the part. But this will not account for their power in checking discharges from remote parts, when they are introduced into the system through the digestive organs. In the latter case, we must suppose that a peculiar some peculiar change in the living principle of the nervous generally, which is incompatible with excessive secretion or discharge. In cases where the use of astringents is indicated, it will be always necessary, in the first instance, to investigate the cause by which the morbid discharge is produced, as it often arises in diametrically opposite states of the system, and therefore very different remedies will, in different cases, assume the character of an astringent. Thus, where irritability exists, opium taken from the divided narcotics, will often prove our most useful remedy, while other doses or as an adjuvant to some more powerful astringents. If a pain of pleasure of the vascular system, bleeding and other debilitating processes will be indicated

or if too drastic, as in severe forms of diarrhœa, be counteracted by acetic acid or acid vinous emollients or demulcents, and narcotics should be employed.

[Many of the articles relied on for internal exhibition as astringents, and especially useful in controlling hæmorrhages, are valuable and for their active, not upon their astringent powers; such as the stramonium, sympathetically transferred to the remote parts of the living organism, but upon their nauseating properties, thus retarding the general circulation, and diminishing both the force and frequency of the pulse. It is to this that dry salt, or salt and water, owes its reputation as a popular remedy in hæmoptysis, and not to any special astringent action.]

ACETUM, L. ACETUM VINI, D. ACETUM GALLICUM ET BRITANNICUM, E. *Vinegar prepared by fermentation* (Lond.). *Wine vinegar* (Dub.). *French or British vinegar* (Edin.).

P. P.—Vinegar is of a pale reddish yellow colour, transparent, with a sharp, peculiar odour (*acetous*), and an acid or sour taste. Sp. gr. from 1·006 to 1·013. French, or wine vinegar is generally of a deeper colour, and has a more fragrant odour than British, or malt vinegar; its density also is greater, being from 1·011 to 1·022.

C. P.—It is composed of acetic acid, colouring matter, mucilage, and water, and a trace of alcohol. British vinegar also contains sulphuric acid, minute traces being allowed by law to exist in a hundredth part by weight of that acid; wine vinegar may be distinguished from malt vinegar by "ammonia in excess causing a purplish muddiness, and slowly a purplish precipitate with it" (*Ed. Phil.*); in addition to the constituents mentioned above, it usually contains some bitartrate and sulphate of potash. The colouring principle of vinegar is supposed to be acetic ether. Its medicinal virtues depend on the acetic acid it contains.

Pure ... Vinegar is an article of the Materia Medica in the three British Pharmacopœias. In Pharmacy it is frequently used for the purpose of ... all its large quantities ... [illegible] ... [illegible] ... [illegible]

[illegible] which is termed *proof vinegar*, is estimated to contain five per cent. of real acid. In the application of this test, however, care must be taken to allow for any sulphuric acid present.—The impurities most commonly met with in vinegar are metallic matter, generally copper or lead; some acrid vegetable substance, as capsicum, grains of paradise, &c., and sulphuric acid. If the colour be altered on the addition of sulphuretted hydrogen, it contains metallic matter: the presence of any acrid substance may be detected by the taste, the vinegar having been first neutralized with carbonate of soda; the quantity of sulphuric acid contained is indicated by the extent of the precipitate produced with solution of acetate or nitrate of baryta.

Ac. E.—Vinegar is an excellent *corrugating* astringent, and as such is employed with much benefit in the sanguinous sweatings and diarrhœa of hectic—taken largely diluted with water, as the usual drink of the patient. It will seldom fail to diminish the excessive discharges. As a local astringent, it is used to check hemorrhage from the nose, from the uterus, from hæmorrhoidal excrescences, and from ulcers; in catarrhal hæmorrhage, gargles containing vinegar have been employed with much advantage, particularly when the bleeding proceeds from the large intestines. In relaxation of the uvula and tonsils, it forms an excellent addition to astringent gargles, and in chronic ophthalmia, diluted with water, it is beneficially employed as a collyrium. Finally, in poisoning with the alkalies or alkaline carbonates, vinegar is one of the best antidotes that can be employed; but in poisoning with most other substances, for which at one time it was very generally used, its administration is in general productive of harm.

Ac. A. M.—*Acet. Aceti*—℥ij to ℥ss. For an enema, ℥ij to ℥vj. As a drink in hectic, ℥ij, diluted with One of distilled water, may be taken in the course of the day.—*Acetum destillatum*, D. L. E. "White vinegar, *by measure*, 10 parts; distil 8 parts *by measure*, with a gentle heat in glass vessels, rejecting the first part which comes over. The specific gravity of the acid should be 1·006." E.—"Take of vinegar, any; in the vinegar distil in a sand bath, from a glass retort into a glass receiver. Keep the Ovj. first distilled for use." L. "Take of vinegar (French by preference), a sufficient quantity; distil over with a gentle heat, ? parts; dilute the product, previously, with distilled water, till the density = 1·005." E.) "This preparation is preferred to common vinegar for external use in [illegible] eye-washes, &c.—*Oxymel*, D. L. E. "Honey, *by weight*, ℔ij; distilled vinegar, *by measure*, ℔j; boil down with a gentle heat to the consistence of syrup, removing the scum." D. "Honey (purified), ℔vj; acetic acid, Oss; mix the acid with the honey, and boil." L.) An excellent addition to gargles.—*Acetic gargle*, D. "Vinegar, ℥vj; honey of roses, ℥ss; boiled water, ℔iss.; mix." As an ordinary gargle to relieve sore throat.

Concentrated Sulphuric Acid (Oxygen process). Take 1 vol. of H$_2$O$_2$ (12 vol. of *Ozone*).

P. P.—It is a heavy, oily-looking liquid, usually of a brownish colour when pure (the commercial acid generally has a considerable yellow tinge), inodorous, with an overpowering and burning taste; when diluted with water, the taste is strongly acid.

C. P.—It is composed of one equivalent of sulphuric acid (H$_2$SO$_4$) and one of water; it boils at 620°, and freezes at —10°. It has a great affinity for water, which it absorbs from the atmosphere, evolving in combination with water great heat (a mixture of 1 part by weight of strong acid with one of water raises the temperature to near 300°. Sulphuric acid is one of the most powerful acids of chemistry, supplanting nearly all others from their combinations. It clears and destroys most animal and vegetable colours. Its most characteristic is the battery which precipitates insoluble in other acids of alkalies, which it produces with solutions of the muriate or nitrate of baryta.

Test.—The method of preparing sulphuric acid is described in all elementary works on chemistry. The bottle and drainage arrangements given [illegible] pouring the acid in order to obtain it free from the sulphurous acid and other the commercial acid; it is then washed during the process. [illegible] sulphuric acid, by [illegible] put it into a retort or [illegible] with a funnel [illegible] acid, and with the precaution [illegible] apply heat until a [illegible] [illegible] subsides; one [illegible] be repeated, as it contains water [illegible] acid has [illegible] the [illegible] [illegible] [illegible] oxidizes from becoming too violent [illegible] specific gravity of the [illegible] to 1·844. [illegible] as it is apt to [illegible] [illegible] [illegible] [illegible] and contain [illegible] and [illegible] [illegible] [illegible] as a [illegible] [illegible] [illegible] [illegible]

worms, the stomach, or intestines, in purpura hæmorrhagica if very great debility be present, and in the colliquative sweating and diarrhœa of hectic. As a topical astringent, sulphuric acid largely diluted was at one time much used to foul and indolent ulcerations of the mouth and fauces, but in consequence of its liability to injure the teeth, it is scarcely ever employed in such cases at present. The internal use of this acid, if continued for any length of time, is apt to derange the digestive functions, causing cardialgia, griping pain, and emaciation.

D. & M. of Adm.—*Acidum sulphuricum dilutum*, D. L. E. (Sulphuric acid (pure, D.), one part (fʒss., L.; fʒj., E.); distilled water, 7 parts (fʒxviss., L.; fʒxiij., E.): add the acid to the water gradually, and mix. Sp. gr., 1·084, D.; 1·090, E.). Dose, min. x. to min. xxx. in fʒi. to fʒij. of some mild liquid: it is usually given in the cold infusion of roses.—*Acidum sulphuricum aromaticum*, D. E. (Sulphuric acid (commercial, E.), *by weight*, ʒvj. (fʒiss., E.): rectified spirit, *by measure*, fʒj. (fʒss., E.): add the acid gradually to the spirit, digest the mixture with a very gentle heat for three days in a close vessel; then add cinnamon bruised, ʒss., and ginger bruised, ʒj.; digest for six days more, and "filter through paper placed in a glass funnel," D. "Strain; or the mixed powders may be moistened with a little of the acid spirit, and after 12 hours the powders may be exhausted by percolation with the rest of the spirit," E.) This preparation is used in the same cases as the dilute sulphuric acid, for which it forms an agreeable substitute. Dose, min. x. to min. xx. in a wine-glass of water.—*Unguentum acidi sulphurici*, D. (Sulphuric acid, ʒi.; prepared hog's lard, ʒj.: mix.) Not much employed at present; said to be useful in scabies.

Incomp.—The alkalies, and their carbonates; most metals, and their oxides; some of the earths, and their carbonates; acetate of lead; and chloride of calcium.

In poisoning with this acid, the best antidotes are the alkaline bicarbonates, or carbonate of magnesia. Chalk and magnesia, though generally recommended, should not be employed, as with the former sulphate of lime is formed, and the combination of sulphuric acid with the latter produces a considerable degree of heat. External parts burned with it should be washed with soap and water.

ALUMEN; ALUMINÆ ET POTASSÆ SULPHAS, D. L. ALUMEN, E. Alum; *sulphate of alumina and potash*.

C. P.—As met with in the shops, alum is in transparent, colourless crystalline masses, void of colour, having a sweetish, astringent taste. Sp. gr., 1·700. By solution and crystallization, it may be obtained in regular octahedrons.

C. C.—It is composed of one eq. of sulphate of potash, one of sulphate of alumina, and 24 of water (KO, SO³ + Al²O³, 3 SO³ + 24 HO). The crystals effloresce slightly in the air, heated, they lose all their water of crystallization, all of which they part

with, and are converted into a light, porous mass, known as *dried* or *burned alum*. Alum dissolves in 18·4 parts of cold water, and in 0·75 parts of boiling water; the solution is decidedly acid. When a red heat alum is deprived of most of its sulphuric acid, and is converted into a mixture of sulphate of potash and pure alumina.

This salt is not liable to adulteration.

TH. E.—Alum is a powerful astringent, and as such is employed with benefit in the treatment of many diseases, both as a general and topical remedy. Administered internally, it is found useful in the treatment of chronic diarrhœa and dysentery, in excessive discharges, in passive hæmorrhages, in the colliquative sweating of hectic, &c. In *pyrexia*, given in large doses frequently repeated, it has proved very successful in the hands of many practitioners, and it has also been found to be an excellent remedy in the treatment of *cholera pictonum*, given in full doses combined with opium. As a topical astringent, it is employed to arrest bleeding from minute vessels, as in epistaxis, in hæmorrhage, in hæmorrhoids, leech bites, &c.; *dried alum* in fine powder is an excellent application in the early stages of the inflammatory sore throat of measles, measles, and smallpox, and in deafness, it is best applied by insufflation, that is, by placing some of it in a glass tube, and blowing it into the throat. Dissolved in water, alum is also used with much advantage, as a gargle, in relaxation of the uvula and tonsils, in chronic ulcerations of the mouth and fauces, and in excessive salivation; as a collyrium, in chronic ophthalmia; and as an injection in gleet and fluor albus.

D. & M., or ADM.—*Internally*, gr. x. to 3ss. in powder, [illegible] into pill with extract of liquorice, or it may be given in solution in some aromatic water.—*Potio aluminis comp.*, E.—(Alum, [illegible] kino, ℥ss.; mix them and reduce them to fine powder.) A useful astringent in chronic diarrhœa, and in passive hæmorrhages from the stomach and bowels; dose, gr. xij to ℈ij. It has also been applied externally to flabby, indolent ulcers.—*Aluminis pulvis*, (Alum, powdered, gr. x.; new milk, ℥j.; boil together for a few minutes, and strain, to separate the curd.) Sufficient for one dose. *Externally*, gr. xxx. to ℈ij dissolved in Oj. of water.—*Collyrium aluminis*, D.—(Agitate together, so as to form a compound, the whites of two eggs and a drachm of alum.) In cases of purulent ophthalmia, applied to the eye between two folds of lint.—*Aluminis [illegible]*, D.—*ex succedaneum*, L. E. (Take any convenient quantity of alum; liquefy it in an earthen (or iron, D.) vessel over the fire, increase the heat till the ebullition has entirely ceased, and reduce it to powder.)—For external use only.—*Liquor aluminis compositus*, (Alum and sulphate of zinc, of each, ℥j.; boiling water, Oij.; dissolve the salts together in the water, and strain.) An excellent astringent lotion, collyrium, or injection.

INCOMP.—Alkalies and their carbonates, lime-water, [illegible] Cave astringents; tartrate of potash; solution of lead; [illegible] gelatinous matter; and substances containing tannin.

Catechu, D. L. E.—*Catechu; Extract of the wood of Acacia Catechu*, D. L.—*Extract of the wood of Acacia Catechu; of the kernels of Areca Catechu, and of the leaves of Uncaria Gambir; produced from various other species*, E.—*Acacia Catechu* is a native of several parts of the East Indies; it belongs to the natural family *Leguminosæ*, and to the Linnæan class and order *Polygamia Monœcia*. *Areca Catechu* abounds most of the Indian continent and islands; it belongs to the natural family *Palmaceæ*, and to the Linnæan class and order? *Monœcia Hexandria*. *Uncaria Gambir* is a native of many of the islands of the Indian Archipelago; it is placed in the natural family *Cinchonaceæ*, and in the Linnæan class and order *Pentandria Monogynia*.

P. C.—[illegible] Catechu, about 15–20 feet high, with a brown, scabrous bark and a hard, heavy white timber in the centre; flowers numerous, yellow. Its pinnæ, [illegible] Areca Catechu, a beautiful palm between 70 and 80 feet high; leaves 5–6 feet in length, spreading at the extremity of the stem. Kernels of no particular character, appearing from among the leaves; fruit, a handsome orange-coloured ovoid drupe. Uncaria Gambir, a stout woodland climber; leaves ovate-lanceolate; flowers green and pale; it bears heads of a greenish-yellow pubescence.

P. [illegible]—The [illegible] Catechu is obtained by boiling the pod-bearing wood, cut and chipped, for [illegible] hours in water, until the decoction is sufficiently concentrated by boiling or cooling, a tough extract [illegible] is then divided into small masses, and dried slowly in the sun. In the interior of the fruit of the Areca palm is contained a [illegible] kernel, [illegible] internally [illegible] with white veins, commonly known by the name of betel nut, and which, with lime and the leaves of the Piper betle [illegible] the astringent preparation of the East, called Betel. These [illegible] a large quantity of tannin, and a decoction of them concentrated and dried forms one of the articles of commerce. The leaves of the Uncaria gambir are boiled in water [illegible] after [illegible] are pulled from the tree. The decoction [illegible] and cut into square or parallelopiped morsels, to constitute the article in cakes of commerce.

P. P.—A great many varieties of catechu occur in commerce; but we shall confine our attention to the two sorts most usually met with in druggists' shops, the remainder being chiefly employed for dyeing. 1st. *Brown Catechu in irregular masses*. This is the produce of the Acacia Catechu; it occurs in irregular masses, weighing from three or four ounces to a pound or more each, of a chocolate-brown colour, very friable, with an astringent, bitter taste. 2d. *Catechu in cakes (Gambier, Terra Japonica, Cubical crystals Catechu)*. This variety is obtained from the Uncaria Gambir; it occurs in cakes, whose faces are about an inch square; it is of a yellowish-brown colour, with a paler, dull, earthy fracture; is void of odour, but has a very astringent taste, becoming [illegible] sweetish.

C. P.—The different varieties of catechu consist principally of tannin and a peculiar acid, which has been named *catechuic acid*. Their astringency depends on the tannin, of which the finer qualities contain 55 per cent., while some inferior specimens do not yield more than 38 per cent. Catechu does not dissolve completely in boiling water; but, when of good quality, is almost entirely [illegible] by it. The watery infusion is of a dark reddish-brown colour, and [illegible] brown paper turmeric; it gives a blackish precipitate with [illegible] of iron.

1 part; sugar, 4 parts; mucilage of gum-tragacanth, sufficient to form into a proper mass; divide into lozenges of gr. xij. each.)

Incomp.—The alkalies; salts of iron and of lead; gelatine; and all vegetable substances whose active principle is an alkaloid, as in such the tannate of the alkaloid will be formed; Christison, however, states that it is probable that the alkaloidal tannates are sufficiently soluble in the acids of the gastric juice.

Creasotum, L. Creasotum, E.—*An oxyhydrocarburet, prepared from pyroxylic oil* (Lond.).—*Creasote* (Edin.). Creasote exists in pyroligneous acid, wood smoke, and in wood tar, from the latter of which it is usually prepared. Different processes are followed by different manufacturers for the preparation of creasote; and as they are very complicated, and can only be successfully executed on the large scale, I must refer to some of the modern works on chemistry for an account of them.

P. P.—Pure creasote is a colourless, transparent, oily-looking liquid, having a smoky odour, and a bitter, acrid, somewhat caustic taste. Its sp. gr. at 68° F. is 1·037 (Reichenbach); 1·060 (Edin. Pharm.).

C. P.—It is a compound of $C^{14}H^{8}O^{2}$. It boils at a temperature of 397·4, and is not congealed at —16·6°, at a temperature a little above its boiling point it is decomposed; it is inflammable, and burns with a very sooty flame. Creasote forms two different compounds with cold water: one, a solution of 1·25 parts of creasote in 100 parts of water; the other, a solution of 10 parts of water in 100 of creasote. It mixes with acetic acid in all proportions, as also with alcohol and ether. It coagulates albumen; and has a powerful preservative property with respect to animal substances, whence its name is derived (κρέας σώζω).

Observations.—Creasote, from being badly prepared, frequently contains a number of peculiar principles which exist in tar, and it is commonly adulterated with the fixed and volatile oils; its purity may be known by its being colourless, by its complete solubility in acetic acid, by its density not being too high, and "by its leaving no discoloured stain on white filtering paper, when dropped on it, and exposed to a temperature of about 212° for ten minutes."—*Ed. Ph.*

T. E.—As an astringent, creasote is only employed externally. Its principal uses are, as a styptic, to arrest hæmorrhage, which it does very effectually when the bleeding proceeds from small vessels, as in cuts or abrasions, from leech bites, or from ulcerated surfaces; and as an application to indolent ulcers, especially when accompanied with a sanious discharge, to chronic venereal or phagedenic affections, to ulcerated chilblains, and in chronic skin diseases, particularly those of the scalp. In the external application of creasote in the form of wash, its little solubility in water should be remembered, for if an excess be present it will float on the surface, and being thus directly applied, will produce an effect very different from what was intended. For a wash, take gr. iij. to fʒ. vj.

may be dissolved in ℥j. of water; or the following ointment may be employed: *Unguenti Cerussæ*, ℥ ℈ ... (*Unguent. Plumbi Subacet.*, ℥ (31)... ℔j.) "rub and rub them," ℈ ... "Rub the ointment well into the eyebrows, and continue to do so for three minutes on awaking." E.]

[Cerussite is much used in the Western States, not only as an astringent, but as a caustic, a purge, in ulcerations of the bowels, and especially in certain diseases of the ear. For the latter purpose, one drachm is added to three drachms of oil of almond, and introduced by a camel's-hair pencil in purulent discharges from the ear, attended with deafness. Or it may be diluted with twelve times its quantity of the oil, and then poured into the ear. It has acquired a national popularity by its success in these cases.]

CRETA, *Chalk* (described in the division Animal), is employed as an astringent in the various forms of diarrhœa to which we are liable; however, depend on its natural properties (*Cretæ Præparatæ*). Chalk mixture is very generally used as a vehicle for more active astringents. The following preparation is admirably adapted for the simpler forms of diarrhœa unattended with inflammation: *Pulvis cretæ compositus*, D. L. *Pulvis cretæ aromaticus*, E. (Compound chalk powder, prepared (Eng. E.); hard opium, powdered, ... and (them.) Dose, for adults, gr. xx. to gr. ... children gr. x. to gr. x. Forty grains (D. L.), thirty-seven (E.), of the former contain one grain of opium.

CUPRI SULPHAS, D. L. E. *Sulphate of copper*. *Blue vitriol*.

P. P.—The salt usually occurs in fragments of large crystals of the oblique rhombic prism series, sometimes even of a beautiful blue colour; without odour, but having a styptic, metallic taste (Sp. gr. 2·2).

U. P.—The crystals are composed of 1 eq. of protoxide of copper, 1 of sulphuric acid, and 5 of water (CuO, SO_3, $5HO$; 124·5 + 40 + 45 = 249·5). They effloresce slightly in dry air; at a temperature of 120°, they part with 4 eq. of water; at 400° they become yellowish-red and white; and at a red heat they fuse and lose part of their acid. One part of copper is soluble in 4 parts of cold, and in 2 of boiling water; it is insoluble in alcohol. It has an acid reaction.

[Uses.—It is an article of the Materia Medica in the above-named countries. In the large doses it is usually prepared by exciting powerful vomiting, especially of children, supposing it to be the only safe substitute which is to be found for the ipecacuanha. Less powerful and more certain.

Dose, from 5 to 10 grains.

TR. E.—Sulphate of copper ℈ xxx. dissolved in ℥ viij. of water. Dose, as a powerful diffusible poison producing vomiting, one of the parts with which it comes in contact and rising powerfully on the nervous system, causing death with cramp and convulsions. In small and repeated doses it operates as a tonic and astringent, in the latter operation, it is employed along in the form of ... and ointment, in which it will often succeed in stopping ...]

chlorate, when vegetable astringents completely fail. Externally, a solution of sulphate of copper is used with benefit as a stimulating astringent to indolent and fungous ulcers; acetate of copper, with extractive, is largely in collyrium in chronic ophthalmia, and as an injection in chronic mucous discharges from the urethra or vagina. In the early stages of gonorrhœa, if the inflammation does not run very high, a weak solution, gr. x. to ℥j. of water, repeated three or four times a day, will often succeed in checking the disease.

D. & M. *or* Aust.—Cit. ss. to gr. j. or gr. vj. made into pill with mucilage of acacia. For a lotion, gr. ij. to gr. x. in ℥j. of water. For an injection, gr. x. to gr. xl. to ℥j. of water.

Incomp.—The carbonates and their bicarbonates; acetate of lead; nitrate of silver; all the salts of iron except the sulphate; and most astringent vegetables.

In poisoning with this salt, the best antidote is albumen, as the whites of eggs; and in their absence, wheaten flour. Sugar has also been found beneficial, and iron filings have been recently proposed, so as to precipitate the copper in the metallic state.

FERRI PERSULPHAS. *Persulphate of iron: Persesquisulphate of iron.*

P. P.—A transparent liquid, of a fine orange-brown colour, with a slight acid odour, and an acid, styptic taste.

C. P.—From this solution, large transparent, colourless crystals may be procured: according to Pelouze, their composition is 2 atoms of persulphate of iron (Fe² O³), 3 of nitric acid, and 14 of water. If kept in a bottle not quite filled, or by exposure to heat, the solution is decomposed, peroxide of iron thrown down, and nitrous acid is evolved; in which state it is unfit for medical use.

Dose.—Fifty [illegible] of water, [illegible]; [illegible] and [illegible], a tablespoonful; [illegible] with the water in a capacious glass vessel, and let the gas [illegible]; and in small quantities at a time, as long as any is [illegible]. Prepare the solution in [illegible] glass bottles.

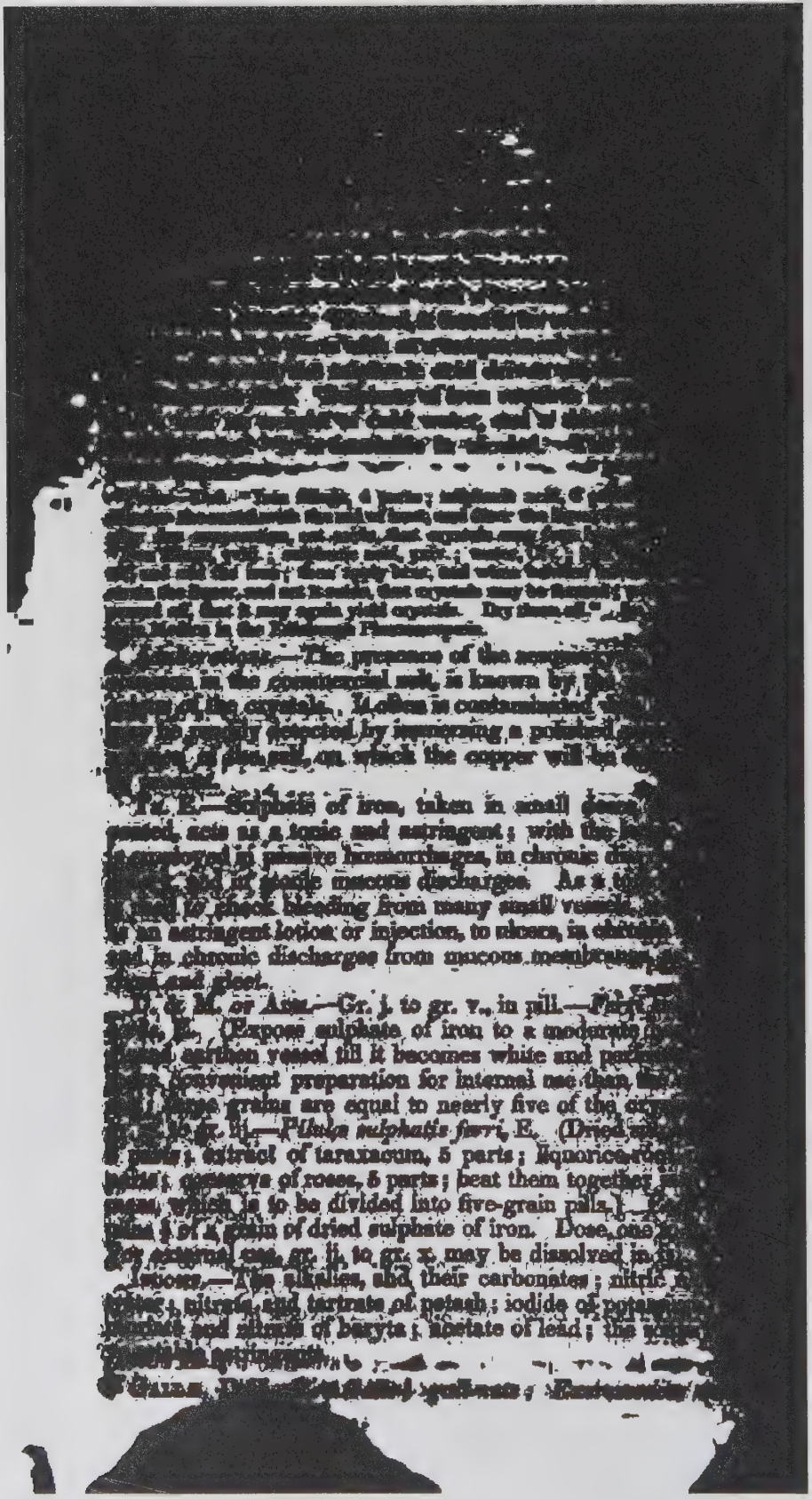
TR. F.—Solution of the persulphate of iron is an admirable astringent, preceding also bitter preparations. It will be found particularly useful in chronic cases of mucous diarrhœa, where there is much relaxation and loss of appetite. In such cases I have derived much benefit from its employment, after many other remedies had failed. My friend Dr. Montgomery, of Dublin, informs me that he has used it extensively in the treatment of mucous discharges from the vagina, and that, in such cases, he considers it the best of the ferruginous preparations.

D. & M. *or* Aust.—Min. xx. to min. xxx. for adults; min. v. to min. xv. for children. It is to be administered in water, sweetened with simple syrup.

Incomp.—All astringent vegetable infusions, decoctions, or wraps.

FERRI FERRIDAS. D. L. E. *Sulphate of prussiate of iron: Green vitriol.*

P. P.—Commonly met with in large transparent, pale, bluish green crystals, the primary form of which is the oblique rhombic



[illegible] of *Quercus infectoria*.—This tree is a native of Asia Minor, belongs to the natural family *Cupuliferæ*, and to the Linnæan Order *Monœcia Polyandria*. Galls are formed on the branches, in consequence of the irritation produced by the punctures of a hymenopterous insect, the *Diplolepis Gallæ tinctoriæ*, which pierces the bark for the deposition of its eggs.

P.—Galls vary in size from that of a large pea to that of a nut. They are of a greyish-green colour, tuberculated on the surface, the tubercles and intervening spaces smooth; hollow, and of a whitish colour internally. They have an intensely astringent taste, but no odour. Galls are imported principally from Constantinople and Smyrna, but some are brought from the East Indies. In commerce, two kinds of galls are commonly met with, viz. green galls, and white galls: the former are gathered before the escape of the insect, and are the best; the latter are perforated with a small circular hole, through which the insect has escaped. They are larger, of a paler colour, but are much inferior in astringency.

C.—Galls are composed of about 26 per cent. of tannin, with gallic acid, extractive matter, a compound of pectic acid and lignin insoluble in cold water, tannates and gallates of potash and lime (*Herapath*). They yield their astringent property to water, dilute alcohol, and ether. Of these, water is the best menstruum; the solution gives a bulky precipitate with solution of gelatine (*tannate of gelatine*, the basis of leather), and a bluish black precipitate with salts of the sesquioxyde of iron (*tannate of iron*, the basis of ink).

They are not liable to adulteration in the drug trade.

T.—Galls are among the most powerful vegetable astringents we possess; nevertheless, they are but seldom employed internally as a medicine they may be used in passive hæmorrhages, chronic diarrhœa or dysentery, in gleet, and in leucorrhœa. Their best antidote in poisoning with tartar emetic, iodine, cinchona, and the vegetable alkaloids generally. External galls are employed as topical astringents in the milder forms of prolapsus ani, in relaxation of the uvula and tonsils in chronic ulceration of the mouth and fauces, and in atonic mucous discharges.

D. & M.—*Dose and Mode of Administration.*—*Internally*, in powder, gr. v. to ʒj.—*Infusum Gallæ*, Galls powdered, ʒss.; boiling water, fʒvj. Dose, fʒss. to fʒj.—*Tinctura Gallarum*, D. E. *Tinctura Gallæ*, L. (Powdered galls, D., L.; ʒij., E.) proof-spirit, *by measure*, fʒj. (Oj., L.; fʒxij., E.) macerate for seven (fourteen, L.) days, and filter; "may be prepared by percolation, as in case of capsicum." E.) Dose, fʒss. to fʒj. *Externally*, ʒj. infused in Oj. of water for a quarter of an hour.—*Unguentum Gallarum*, D. (Galls in powder, ʒj.; lard, ʒvij.; mix.—*Unguentum Gallæ compositum*, L. (Galls, finely powdered, ʒj., lard, ʒvij., in powder, ʒss.; lard, ʒij. E.; triturate well together.) The ointment of galls and opium is an excellent application in fissure of the anus; the compound is also often united with belladonna.

To E.—*Logwood* is an excellent astringent in chronic diarrhœa and dysentery, for which it is peculiarly adapted, as, although it checks the excessive discharge, it does not produce constipation. It has also been used in the profuse sweating of phthisis, and in diabetes.

D. & M. or Aqu.—*Decoctum Hæmatoxyli*. D. L. E. (Logwood, in fine chips, ℥ss. (Si., E.); cinnamon, bruised (powdered, E.), ℈j; water, by measure, ℔ss (Oi., E.). Boil the logwood in the water down to one half, adding the cinnamon towards the close; and strain.) Dose, ℥j to ℥ij. *Extractum Hæmatoxyli*. D. L. E. ("Employed as the simpler extracts." D. "Logwood, powdered (in chips, L.), 3viss. (3xij, E.); boiling water (distilled, L.), cong. iij (cong. i., L.), macerate for 24 hours, then boil down to cong. j (Oiss., L.), strain while hot, and evaporate in the water bath (vapour bath, L.) to a proper consistence.) Not much used; it becomes so hard by keeping, that pills made of it pass through the bowels unchanged. Dose, gr. x. to gr. xxx.

Incompr.—The mineral acids; acetic acid; lime-water; sulphates, and acetates.

Kino, D. L. E. *Kino; Extract of Pterocarpus erinaceus*. L. *Concrete exudation of Pterocarpus erinaceus, and of other undetermined genera and species*. E.—African kino (which I believe to be the variety usually met with in British commerce) is obtained from the Pterocarpus erinaceus, a native of Gambia and Senegal; belonging to the natural family *Leguminosæ*, and to the Linnæan class and order *Diadelphia Decandria*. East India Kino, which, according to Pereira, is always regarded in commerce as *genuine* gum kino, is the extract of a plant not yet positively ascertained, probably another species of the genus Pterocarpus. Botany Bay kino, also sometimes met with, is the inspissated juice of the Eucalyptus resinifera, a native of Australia and Van Dieman's Land; belonging to the natural family *Myrtaceæ*.

Prep.—[Gum Kino is prepared from its juice, which is evaporated to the consistence of honey, and then dried. It is sometimes adulterated with gum, which is detected by its insolubility in alcohol. East India kino is said to be prepared by boiling down the leaves and young branches, and then heating to redness.]

P. P.—Kino occurs in the form of small angular fragments or grains, some of them larger than a pea, opaque, glistening, and of a dark reddish-brown colour. They are very brittle; when chewed they adhere to the teeth, and give the saliva a blood red colour. They have no smell, but have an intensely astringent taste.

U. P.—Kino is composed of 75 per cent. of tannin and a peculiar principle, containing catechine and, 24 of red gum, and 1 of insoluble matter. It is only very partially soluble in cold or boiling water; but alcohol dissolves nearly two thirds of it, and is therefore the best menstruum for its administration in medicine.

Adulterations.—Other astringent substances, which have a general resemblance to kino, but are of inferior quality, are frequently

...ture, D. E. (An article of the Materia Medica, D.—"Prepared in the same way as extract of logwood.") D. [illegible] Dose, gr. xx to gr. [illegible]—*Infusum Krameriæ*, L. (Rhatany, &c.; boiling distilled water, [illegible] macerate for 4 hours in a vessel lightly covered, and strain.) Dose, fʒ ss to fʒ ij. This solution becomes quite turbid on cooling, and would be better made with cold water by the process of percolation.

Incompt.—All substances incompatible with tannin.

Lythrum salicaria, herba, D. *Purple Loosestrife.*—An indigenous plant, belonging to the natural family *Lythrariæ*, and to the Linnæan class and order *Dodecandria Monogynia*.

The whole of this herb possesses mildly astringent properties; it was formerly much employed in chronic diarrhœa and dysentery, but at present it has fallen completely into disuse.

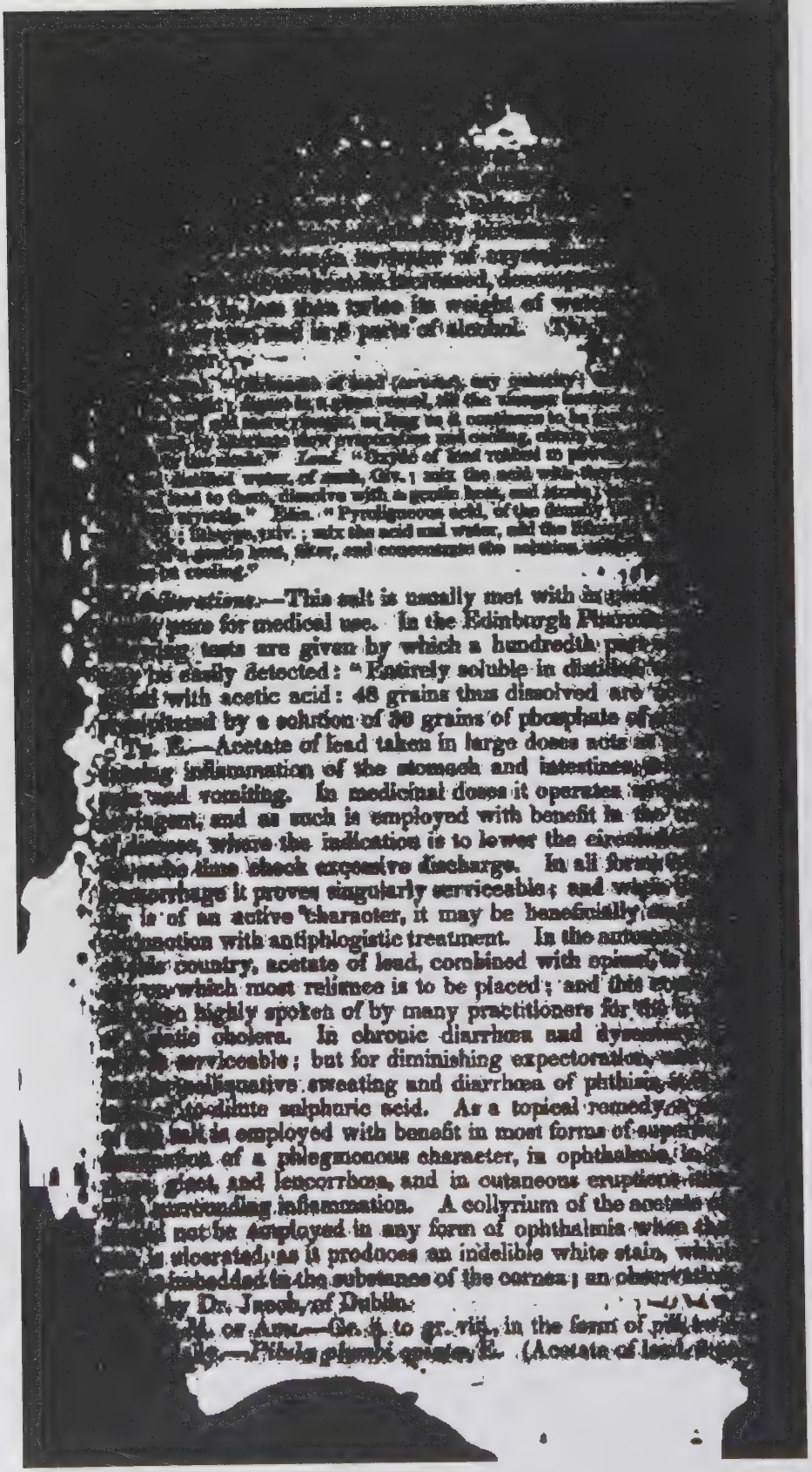
Moreasm.—Under this name, a few years since, an astringent extract was imported into France from South America; it was said to have been obtained from the bark of a tree, a native of Brazil, but the name of which is not known. The extract was brought over in large cakes, which were purified by dissolving in water, filtering, and evaporating; the purified extract is in small brittle pieces resembling kino in appearance, but it has not the peculiar ruby tinge of that substance; the taste is at first sweetish, then astringent, and the odour feebly aromatic; it dissolves readily in water, affording a dull brown, somewhat opaque solution. According to the analysis of MM. Derosne and Henry, it consists of tannin, red colouring matter, glucuretine, and a peculiar acrid principle, which they have named *Moresine*.

Like numerous other medicines when first introduced, Moresm was extravagantly lauded as a remedy possessing powerfully astringent properties; experience has, however, proved that it is much inferior to either kino or catechu, and it probably may take a respectable station between those substances and extract of [illegible]. It has been used in all cases where astringents are indicated, both externally and internally, but the disease in which it appears to have been most serviceable is chronic diarrhœa.

D. & M. or Aqua.—In substance, gr. v to gr. xv.—*Tinctura Moresmi Decocti*, D. (Extract of moresm, fʒ i; proof spirit, fʒ xxx; water, fʒ x; mix, and when the lees have subsided, pour off the tincture.) Dose, fʒ ss to fʒ j.—*Mistura Moresmi*. (Extract of moresm, [illegible]; water, fʒ xxx.; compound tincture of cardamoms, fʒ ss., mix.) Dose, fʒ ss. to fʒ j. two or three times a day.

Incompt.—Mineral acids; salts of iron, zinc, and lead; opium; and solution of gelatin.

Plumbi acetas, D. L. E. *Acetate of Lead*; *Sugar of lead*.—[illegible]



[illegible]

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excoriated parts and slight ulcerations. Spread on leather, it is said to prove useful applied over the seat of the pain in local neuralgia.—*Unguentum plumbi carbonatis.* D. E. ("Carbonate of lead, in very fine powder, ʒij.; ointment of white wax, ℔j.; make into an ointment." D. "Simple ointment, ʒv.; carbonate of lead, ʒi.; mix thoroughly." E.)

Plumbi diacetatis (subacetatis, D.) liquor. D. L. Plumbi diacetatis solutio. E. *Solution of Diacetate of Lead; Goulard's Extract; Extract of Saturn.*

P. P.—This solution is transparent and colourless; it has a weak acetous odour, and a sweetish, astringent taste. Sp. gr., 1·118 at 68° (D.); 1·260 at 62° (L.).

C. P.—It is an aqueous solution of diacetate of lead, which salt may be obtained in a crystalline form by evaporation; crystallized diacetate of lead is composed of 1 eq. of acetic acid, 2 of protoxyde of lead, and ten of water (2 Pb O, ($C^4H^3O^3$)+10 HO). Exposed to the air, it deposites a white precipitate of carbonate of lead; the same effect is produced by adding a solution of carbonic acid or a carbonate.

Pharm.—*D.* "Semivitrified oxyde of lead, 1 part; distilled vinegar, 12 parts, boil with the mixture in a glass vessel, until 11 parts remain; set aside the liquor, and when the impurities have subsided, filter." *Lond.* "Acetate of lead, ℥ij. ʒiij.; oxyde of lead, reduced to powder, ℥j ʒiv; water, Oviij.; boil them for half an hour, frequently stirring; and when the liquor is cold, add of distilled water as much as may be sufficient to measure with it Ovj.; lastly, strain the solution." *Edin.* "Acetate of lead, ℥vj.; litharge, in fine powder, ℥v.; water, Oiss.; boil together at a gentle heat occasionally, when the solution is cold, add water, if necessary, to make it measure, and then filter. Preserve the solution in well-closed bottles."

Th. E.—This solution is not used internally; externally, it is employed, properly diluted, in the same cases as a solution of acetate of lead; the only advantage it possesses over which is, that it does not dry up so quickly.—*Plumbi subacetatis liquor comp.*, D. *Liquor plumbi diacetatis dilutus.* L. (Solution of subacetate (diacetate, L.) of lead, ℥ij. (ʒiss., L.); distilled water, ℔ij. (Oj., L.); proof spirit, ℥ss. (ʒij., L.); mix.) This preparation is too weak for [illegible].—*Cerussæ [illegible] comp.* L. (Solution of diacetate of lead, ʒij.; wax, [illegible], Oss.; camphor, ʒss.; mix the melted wax with the [illegible], stirring constantly, and remove them from the fire, and when [illegible] begin to [illegible] gradually the solution of [illegible] and continue the stirring with a spatula until they [illegible] the remainder [illegible] as a dressing to diminish [illegible].

[illegible]: Solution of gum; organic [illegible].

[illegible] E. *Fused* [illegible] pharmaceutical [illegible] astringent [illegible] and super-

[illegible] preparations.—It enters into the composition of the following officinals: *Emplastrum Lithargyri*, D. E. *Emplastrum Plumbi*, L. (Litharge, a very fine powder, ℥v., (℥vj., L. ; ʒv., E.) ; olive oil, [illegible] (℥vj., L. ; fʒiij., E.) ; water, *by measure*, ℥ij (Oj., L. ; fʒiij., E.) ; boil together (with a superior heat, D. ; over a slow fire, L.), stirring constantly, until the oil and litharge unite into the consistence of a plaster ; it will be proper to add a little boiling water if it evaporate too fast.) *Thachylon plaster* ; it is used for retaining the edges of fresh wounds in contact, and as the basis of many other plasters.—*Diapasmatum pluvii compositum*, L. (Prepared chalk, ʒvij. ; distilled vinegar, fʒvj. ; plaster of lead, ℥ij. ; olive oil, Oj. ; melt the plaster in the oil with a slow fire ; then gradually add the chalk previously mixed with the vinegar, the effervescence being finished, and stir constantly till they are cooled.) Generally used as a dressing for indolent ulcers.—*Emplastrum Lithargyri cum Resina*, D. *Emplast. Resinæ*, L. *Emplast. Resinarum*, E. (Litharge plaster, [illegible] (℥vj., L. ; ʒv., E.) ; resin (yellow, D.), ℥ss. (ʒi., E.) ; add the resin, powdered, to the litharge plaster melted over a slow fire, and mix.) Thus is the *adhesive* or *sticking plaster* of the shops, commonly used for retaining the edges of wounds in contact, and for supporting ulcers.—*Emplastrum Saponis*, D. L. E. (Litharge plaster, [illegible] (ʒiv., E.) ; soap (hard, D. ; Castile, E.), shred, ℥ss. (ʒi., E. ; plaster, ʒij., E.) ; melt the plasters, add the soap, and boil down to a proper consistence.) This plaster, when kept, is apt to crumble to powder, to obviate which, the Edinburgh College have added the gum plaster. It is chiefly employed to give mechanical support.—*Emplastrum Saponis compositum vel adhærens*, D. (Soap plaster, ℥ij. ; plaster of litharge and resin, ℥ij. ; make into a plaster, which should be melted and spread on linen.) An excellent application for the prevention of bed-sores.—*Ceratum Saponis*, L. (Soap, ʒx. ; wax, ʒxiss. ; oxyde of lead, powdered, ʒxv. ; olive oil, [illegible] ; vinegar, cong. ij ; boil the vinegar with the oxyde of lead over a slow fire, constantly stirring them till they unite ; then add the oil, and boil again in a similar manner, until all the moisture is evaporated ; lastly, mix with these the wax, previously dissolved in the oil.) A cooling, astringent dressing.

POLYGONUM BISTORTA, RADIX. D. *Bistort ; Root of Polygonum bistorta.*—Indigenous ; belonging to the natural family *Polygoneæ*, and to the Linnæan class and order *Octandria Trigynia*.

[illegible] flowers perennial ; stems herbaceous, annual, 1–2½ feet high ; leaves ovate, [illegible] ; flowers rose-coloured, in a dense, cylindrical spike.

P. & C. Pr.—The root is dark-brown externally, wrinkled and [illegible] ; reddish internally ; inodorous ; taste strongly astringent. It contains a large quantity of tannin, some gallic acid, starch, and woody fibre ; it yields its astringency to both water and alcohol.

Th. E.—Bistort is among the most powerful of our indigenous astringents ; nevertheless, it has nearly fallen into disuse. It may be employed with benefit in chronic mucous discharges, and in passive hæmorrhages.

Quercus, D. (Prepared as the

powder.

Petals of Rosa gallica

of Europe, now cultivated extensively in the natural family *Rosaceæ*, order *Icosandria Polygynia*.

a velvety appearance, an agreeable during dessiccation, and a very

Buds should be gathered while they are cut off, and then dried

oil, tannin, gallic acid, colouring and some salts. They yield their a reddish-yellow solution, by sulphuric acid.

are very mildly astringent, on account of their colour as forming agreeable vehicles for

Rosæ, L. *Infusum Rosæ acidum*, D. petals, dried and deprived of by measure, iiss; boiling ounce, fss; first pour the water upon the rose petals add the acid, and digest for hour, and add the sugar," D.— sulphuric acid. Take of sugar, pour the water on the rose petals and Macerate for six hours, dissolve the sugar in it," L.—The *Infusum* of the *London* The vessels of glass or the acid added, the and the sugar dissolved in astringent; dose, fjj. to for the administration of *Rosæ*, D. L. *Confectio* sugar, ℥vj; bruise the added, pound them and," D. L. "Beat the twice their weight dram, ℥ss to ℥j). It is it is the best becomes rancid and dried and for

P. P.—Tannic acid, tannin, or gallo-tannic acid is a yellowish-white, uncrystallizable solid, shining and pulverulent; inodorous; taste purely astringent, acid and bitterish.

C. F.—Its composition is $C^{18}H^{10}O^{9}$. Exposed to the air, it absorbs oxygen, and is almost entirely converted into *gallic acid*. It is very soluble in water, moderately so in alcohol or proof spirit, and but sparingly soluble in ether. Its solution reddens litmus paper.

Th. E.—Tannic acid is powerfully astringent, and has been employed on the Continent with much success in the treatment of the various forms of atonic hemorrhage, and in chronic mucous discharges; it has been found peculiarly efficacious in menorrhagia, and in the colliquative sweating and diarrhœa of hectic.

D. & M. ss Ang.—Gr. ss. to gr. j or gr. ij, in the form of pill, or dissolved in water. It has been also employed in the form of gargle, injection, or lotion, in the proportion of gr. v. to gr. xvj of mucilage to ℥j of water.

Incomp.—The mineral acids; the alkalies, and their carbonates; lime-water; acetate of lead, nitrate of silver, tartar emetic, the vegetable alkaloids, and gelatin.

Tormentil. D. L. E. *Tormentil; Root of Potentilla tormentilla.* L. E.; *of Tormentilla officinalis.* D.—Indigenous; belonging to the natural family *Rosaceæ*, and to the Linnæan class and order *Icosandria Polygynia.*

Tormentil root contains about 18 per cent. of tannin, and, consequently, is an astringent of some power, and may be used in the same cases as the other vegetable astringents. At present, however, it is scarcely ever employed, except as a domestic remedy. The dose of the powdered root is from 10c. to 3ss. twice or four times a day. The decoction is a better mode of administering it: Decoctum *Tormentillæ*, L. (Tormentil, bruised, ℥ij; distilled water, Oss. Boil down to Oj, and strain.) Dose, ℥ij to ℥iss., two or three times a day. It is also an excellent astringent lotion or injection.

Bearberry. D. L. E. *Bearberry; Leaves of Arctostaphylos Uva-ursi.* L. E.; *of Arbutus Uva-ursi.* D.—Indigenous; belonging to the natural family *Ericaceæ*, and to the Linnæan class and order *Decandria Monogynia.*

P. P.—The dried leaves are dark-green, shining, convex above, paler and reticulated on the under surface; they have a very astringent somewhat bitter taste, and emit a faint odour in the powdered state.

C. F.—Contain 20.4 per cent. of tannin, with some gallic

...ter in the same manner as prepared chalk. It then constitutes *prepared calamine*, *Zincum carbonas impurum præparatum*, D. L. *Cadmia præparata*, L. E. It is commonly met with in the form of a heavy, drab-colored powder; when pure, almost entirely soluble in sulphuric acid; it is generally a very impure oxyde of zinc, more or less of the carbonic acid having been driven off by the roasting. Calamine is used in powder, or in the form of ointment, as a mild desiccative and astringent for the treatment of interrigo, excoriations, and superficial ulcerations. The following is the only official preparation: *Unguentum Calaminæ*, D. E. *Cerotum Calaminæ*, L. ("Ointment of yellow wax, ℥v.; prepared impure carbonate of zinc, dried, ℥ij; rub the carbonate of zinc until it is completely powdered; then add it to the ointment, and mix." D. "Calamine, prepared, ℥viss.; olive oil, fʒxvj.; mix the oil with the melted wax; then remove them from the fire, and when they have begun to thicken add the calamine, and stir constantly till they cool." L. "Calamine, prepared in the same way as prepared chalk, 1 part; simple cerate, 8 parts: mix them well together." E.) This preparation, under the name of *Turner's cerate*, is in very general use as a demulcent and healing ointment.

Zincum oxydum, D. L. E. *Oxyde of Zinc*; *Flowers of Zinc*.

P. P.—A yellowish-white, earthy powder; tasteless and inodorous.

C. P.—It is composed of 1 eq. of zinc, and 1 of oxygen (Zn O). When heated it becomes yellow, but regains its whiteness as it cools; at a white heat it is volatilized. Oxyde of zinc is insoluble in water, but most acids dissolve it readily; from its solution in any of the acids it is precipitated by ammonia as a white gelatinous hydrate, which is redissolved by an excess of the alkali.

Pure.—Obt. "This is known from the following tests: there is an immediate effervescence with every acid; the solution is colorless, transparent, and remains long continued; the addition of ammonia to the solution after the injection of each acid produces a white precipitate, which does not re-dissolve in the alkali, even when added in excess; and the white precipitate thus produced is entirely soluble in acetic acid." Lond. "Sulphate of zinc, ℥j.; carbonate of ammonia, ℥viss.; distilled water, ℥viij.; dissolve the sulphate of zinc and carbonate of ammonia, separately, in ℥iij. of the distilled water, and mingle the solutions. Wash what is precipitated copiously with water; and then, first of all, heat it in a strong fire." Edin. "Sulphate of zinc, ℥iij.; carbonate of ammonia, ℥ij.; dissolve each in ℥ij. of water; mix the solutions; dulcify the precipitate on a filter, wash it thoroughly, squeeze out the water, and dry it; expose it to a red heat."

Adulterations.—It is met with in the shops this preparation generally contains carbonate or sulphate of zinc, sometimes, also, lime and iron. The tests of the Edinburgh Pharmacopœia will detect these impurities. "Whites, metallic, entirely soluble in dilute nitric acid. The solution is not affected by nitrate of baryta, but gives, with ammonia, a white precipitate entirely soluble in an excess of the alkali."

Uses.—As an astringent oxyde of zinc is usually employed externally in the form of powder or ointment, in slight excoriations, chronic ophthalmia, superficial ulcerations, and in ophthalmia tarsi.

[illegible]

[illegible]

[illegible]

CHAPTER V.

CATHARTICS.

(Purgatives.)

often excited surprise, when the small quantity of purgative ingredient in the large quantity of the waters drank is dissolved by analysis. Similar effects, however, can be produced at any time by very large dilutions with water, acidulated with a similar small proportion of Epsom salts. A single teaspoonful of Epsom, dissolved in a quart of common water, if a few drops of either of the mineral acids be added, and the whole quart speedily drank, will produce as free purging as would follow 2 oz. of the same salts, dissolved in a small quantity of water. It is, therefore, easy to explain the remarkable effect of mineral waters thus: Six or more bottles of the water of Congress Spring, for example, are quickly drank, containing, possibly, not more than a drachm of purging salts combined with a small portion of mineral acids and nonpurging saline ingredients. The stomach is mechanically distended, and the duodenum, by the draught of fluid, and the biliary secretion is often provoked immediately by the agitation and irritation of its ducts. Hence the peristaltic motion begins, and progresses rapidly by the distension of so large a quantity of fluid, the small dose of salts being merely auxiliary, and hastening the process. Accordingly, we find that in ordinary cases the discharges are not only bilious, but fluid to an extent corresponding with the number of glasses drank. And it will be observed, also, that in those invalids who complain at the Springs that whatever quantity of the water they drink it fails to purge them, the reason is, that the function of the liver is suspended, and the bile is absent. Nor in such persons do the waters succeed as a cathartic, until calomel, the pill, or some similar medicine is premised, overcoming the hepatic obstruction, after which the waters have their appropriate effect.

These suggestions are introduced here as the result of much reflection and diligent observation for many years, and will admit of more amplification than in this place would be allowable. They will receive confirmation by comparing them with the therapeutical effects of the remedies named under the class of Cathartics by the author.]

ALOE. L. ALOE SOCOTRINA, D. E. *Aloës; Socotrine aloës; Inspissated juice of the leaves of*, L.) *Aloë spicata*, D. L.; *the undetermined species of Aloë*, E.

ALOE HEPATICA, D. ALOE BARBADENSIS, E. ALOE INDICA, E. *Hepatic aloës; Barbadoes aloës; Indian aloës. From Aloë vulgaris*, D. *Extract, or inspissated juice of one or more undetermined species of aloë*, E.—The Edinburgh College correctly states, that aloes is obtained from various species of the genus Aloë; they are indigenous of the East and West Indies, Socotora, Barbary, and the Cape of Good Hope, and belong to the natural family *Lilia*ceæ, and to the Linnæan class and order *Hexandria Monogynia*.

[The species of the genus Aloë from which the drug is obtained are generally characterized by having woody stems, with large, fleshy, amplexicaul leaves, flowers that droop and contain within, among marginal spines or serratures; flow[illegible] in spikes or racemes, tubular, colored; stamens exserted

P. V.—Obtained in three different ways, and from various parts of the world, aloes differs much in its physical properties and morbific powers. Several varieties of the drug are met with in commerce. In addition to those kinds selected by the Edinburgh College, I shall describe a fourth, Cape aloes. 1. Socotrine aloes (*Aloe Socotrina*), so named from its being prepared in the island of Socotra, whence it is imported into England either by way of Bombay or Mocha; it is in masses of a golden-brown colour, possessing a somewhat glassy fracture, and a considerable granular texture; its odour is fragrant and aromatic, much like myrrh; its taste bitter, being bearded on, and the taste is bitter; it yields a powder of a beautiful golden-yellow colour, which is almost entirely soluble in proof spirit. The following are the characters assigned to Socotrine aloes by the Edinburgh Pharmacopœia: "In thin splinters translucent and garnet-red, almost entirely soluble in water and in rectified spirit of wine. Very rare." Socotrine aloes is now rarely procured from the *Aloe Socotrina*; it is imported in small quantities in chests. 2. East Indian aloes (*Aloe Indica*, P.) is generally considered, at least in England, with the foregoing variety. It occurs in large, opaque masses, of a dark, liver-brown colour, with a somewhat waxy fracture; the odour is similar to, but weaker than, that of Socotrine aloes, and the taste equally bitter; it yields a dark-yellow powder, a great part of which is insoluble in proof spirit. It is brought to England in chests and chests from Bombay, but is stated to be originally obtained from the coasts of the Red Sea. It is probably derived from a species of aloe not yet identified with exactly those of the *Aloe Socotrina*. 3. Barbadoes aloes (*Aloe Barbadensis*, P.—*Aloe hepatica*, D.) is a product of Barbadoes, Jamaica, and other West Indian Islands, whence it is exported in gourd-shells. It is of a dark liver-brown, sometimes almost black colour; the fracture is dull and opaque, the odour strong and disagreeable, resembling that of the human axilla and feet; taste bitter. It is reduced to powder with difficulty, yielding a powder of a dull dark-yellow colour. The variety is obtained from the *Aloe vulgaris*, and probably from some allied species. 4. Cape aloes (*Aloe Capensis*) is imported by ships that touch at the Cape of Good Hope, and is very common in England, although not introduced into any of the Pharmacopœias. It occurs in glassy, resinous specimens, of a dull brown colour, with a greenish-yellow streak, generally seems in small fragments, a reddish-brown colour, which is increased by breaking up in hot water; taste bitter; it is very soluble, and its solution is not rendered turbid by the addition of water. It is obtained from the *Aloe vulgaris* and several other species.

C. C.—The

[illegible] (Lond. Pharm.), amounting at the least acid to nearly 50 p. c. Its solution in alkalies [illegible] by the action principles of the drug. The inert parts of aloes contain also resin and a peculiar acid (Aloetic acid, Pereira), in addition to these substances, the inferior sorts contain some vegetable albumen. Aloes is almost completely soluble in boiling water, but as the water cools a dark-brown substance, insoluble in cold water, is deposited; it is very sparingly soluble in rectified spirit, but dissolves almost entirely in proof spirit, and still more readily in weaker spirit; heated, it fuses imperfectly, and, if the heat be continued, is converted into a resinous-looking, very friable mass.

Mode of action.—The only modification of aloes is the varying the inferior sorts with, or substituting them for, the finer kinds; of this we can judge by the physical characters, particularly the colour when crushed on, or by the solubility in weak spirit.

Th. E.—In moderate doses, from three to ten grains, aloes acts as a stimulating cathartic, influencing especially the large intestines, on which it operates either by exciting their peristaltic action, their secreting or increased secretion from their mucous membranes. It produces its effects more slowly than most other medicines of this class, from ten to eighteen hours usually elapsing before it operates. The specific action of aloes on the large intestines contraindicates its employment in inflammatory affections, in irritation or inflammation of the pelvic viscera, the prostate gland or the urethra, in pregnancy, and during the menstrual discharge. From its mode of operation it is also evidently not adapted for cases in which we wish to produce increased secretion from the intestinal canal, or where a speedy operation is required. The employment of aloes as a purgative is, nevertheless, very general, and perhaps there are few so generally cathartics more extensively used. In torpor of the intestines, especially when accompanied with deficient secretion of bile, it is the most useful of this class of remedies. Indeed, by many it is held to be the best substitute for that secretion, and is therefore employed in jaundice when unaccompanied with hepatic inflammation, mechanical obstruction of the ducts, &c. In habitual costiveness or constipation, aloes is also administered with much success, due attention being paid to the circumstances which contraindicate its employment. Cazenhon states, that the cathartic property of aloes is much increased by its combination with salts of iron, and that its irritating action on the rectum is counteracted by combining it with extract of hyoscyamus.

[illegible] Aloe.—Ald Socotrina, D. L. E.—Aloe *Indica*, E.—Aloe *Lucida*, D.—Aloe *Spicata*, D.—Aloe *Barbadensis*, E., gr. x. to gr. xx. In a case of amaurosis [illegible] in the form of pill, made with honey, every night.—*Extractum Aloes Aquosum*, D. *Extractum Aloes per Aquam*, L. E. Prepared as the simple extracts.—D.—"Aloes, powdered, one ounce, boiling water one pint, macerate for three days with a gentle heat, frequently agitating, then strain (a valuable [illegible] aperient, and suspension in a proper menstruum." L.E. [illegible]

(Turner, E.); digest for seven (fourteen, L.) days, and filter.) Cinnamon and sugar. Dose, one drm. to *half*.—*Tincture, Myrrh*, comp. U. L. *Tincture Aloës et Myrrhæ*, L. (Saccotine (or Cape) aloës, E.) aloës, powdered, 6½ (3iv., L. F.); tincture of myrrh, by measure, 9½ (Ziij.); and saffron, 3ij., L. E.): macerate for fourteen (seven, L.) days, and filter.) Stomachic and cathartic. Dose, one to two.—*Tincture Aloës*, L. (Aloes, 9½; carbonate of potash, 3ij. wine; decoction of barley, Oss.; mix, and rub them together). A useful stimulating cathartic in the constipation of amenorrhœa; also employed for dislodging ascarides from the rectum.

CALOMELAS, P. *Calomelas sublimatus*, D. HYDRARGYRI SUBMURIAS, L. [HYDRARGYRI CHLORIDUM MITE, U. S. P.] *Calomel, Sublimed Calomel, Chloride of Mercury.* (*Subchloride of Mercury*, Graham.)

CALOMELAS PRÆCIPITATUS, D. *Calomel by precipitation.*

P. P.—Calomel, as obtained by sublimation, is sometimes in the form of a semitransparent, white, crystalline cake, the crystals being four-sided prisms; as usually met with, however, it is a heavy, snow-white, soft powder, inodorous and tasteless. Its *sp. gr.* is 6·4 (Graham).

C. P.—Calomel is a subchloride of mercury, being composed of 1 eq. of chlorine and 2 of mercury (Hg_2Cl). It is completely insoluble in cold or boiling distilled water, in alcohol, or in ether. It acquires a yellow tinge by exposure to the air or by rubbing; exposed to heat, it becomes yellow, and volatilizes at a heat below redness; if under pressure, it fuses; with lime-water it gives a black-ish precipitate, sub-oxyde of mercury.

[illegible] CALOMELAS PRÆCIPITATUS, D.—"Precipitate of mercury, 3ij parts; purified [illegible] 17 parts; muriate of soda, thirty-six parts; triturate together in an iron mortar till [illegible] and the purified mercury, till the globules entirely disappear; add [illegible] and the dried precipitate of soda; wash well, and in a porcelain vessel, with a gradually increasing heat, sublime like a muriate; reduce the sublimed mass to powder, and wash it with water as long as the decanted liquor precipitates with muriate of tin. [illegible] Mercury, 3iv.; sulphuric acid, 3iij.; chloride of sodium, 3iv.; distilled water, a sufficiency. Rub 3ij of the mercury with the sulphuric acid in a proper vessel, until the [illegible] of mercury remains dry; rub this when it is cold with the rest of mercury in an earthen mortar, that they may be perfectly mixed. Afterwards add the chloride of sodium, and rub them together until globules are no longer visible; then sublime. Rub the sublimate as very fine powder, and wash it carefully with boiling distilled water, and dry it."—*Hydrargyri Submurias*, L. (Mercury, 9vij.; sulphuric acid, 9iij.; chloride of sodium, 3iv.; water, q.s.) [illegible] and [illegible] of the mercury, and triturate it with the acid in a porcelain mortar; when the acid is all driven off, add the remainder of the mercury, and triturate them together until globules are no longer visible; then sublime. Reduce this with the residue of acid and the rest of the mercury, till the globules entirely disappear; [illegible] and wash it carefully with boiling distilled water, until the washings no longer precipitate with solution of bichloride of platinum; and then dry it.—*Hydrargyri Submurias Mite*, U. S.—"Purified mercury, 17 parts; diluted sulphuric acid, 3 parts; water, 12 parts; nitric acid, 1 part; chloride of sodium, 9 parts; water, a sufficient quantity. Put the acid upon the mercury, in a glass vessel, and on a sand-bath or in a capacious iron pot, heat the mixture with a gentle heat for a longer or shorter time, [illegible] the mercury is entirely converted into a white powder. Then wash the powder with hot water, until what passes through the filter is no longer rendered turbid by muriate of baryta. Lastly, dry the powder."

P. P.—Gamboge is generally met with in two forms: that of cylinders, sometimes hollow, more frequently solid, *Pipe gamboge*; and in irregularly-shaped masses, *Cake or Lump gamboge*. *Pipe gamboge* is of a rich, reddish-yellow colour, generally greenish and dusty externally; tuberculous, breaks at last, but when rubbing a sense of scratchy in the throat; brittle, with a smooth, glistening, conchoidal fracture. *Lump gamboge* is of a duller colour; its fracture is splintery, with scarcely any lustre, and it contains small fragments of wood, and many air-vesicles. *Ceylon gamboge* (for a specimen of which I am indebted to my friend Professor Christison) is not an article of British commerce; it is a dark-looking substance, with many air-vesicles, of a dull, reddish-yellow colour, with many dark-brown spots.

C. P.—Gamboge is composed of resin (*Gambogic acid*), soluble gum, and a trace of woody fibre; the proportion of the resin which is the active principle, varies, according to several of Christison's analyses, from 68 to 75 per cent. Gamboge, although not soluble in water, forms a perfect emulsion with it, it is almost entirely soluble in rectified spirit, and sulphuric ether completely dissolves out the resin, leaving the gum.

Adulterations.—The inferior varieties of gamboge are adulterated with some amylaceous matter; they also generally contain starch: the former is detected by a curdled deposition becoming greenish on the addition of tincture of iodine; and the presence of the latter may be known by the fracture not being smooth and conchoidal.

T. E.—Gamboge is a drastic cathartic, producing, even in small doses, frequent and copious watery evacuations, accompanied with much irritation of the stomach and bowels; in somewhat larger doses it occasions vomiting, and even sometimes inflammation of the intestinal canal, followed by death; too drachm has proved a fatal dose on more than one instance; the post-mortem appearances being inflammation and ulceration of the intestines. In consequence of the violence which even the mildest doses of gamboge it is seldom employed singly as a purgative, but is frequently added to other remedies of this class, either to augment their power, or to produce increased secretion from the alimentary canal. The combination of gamboge with an alkali, as with carbonate of potash, makes it a remedy of much power, and such a preparation, under the name of *hydragogue*, is largely prescribed by many practitioners in dropsy. The pain of gamboge, in moderate smaller doses, does not usually produce the desired result.

employed; it is only adapted for febrile or inflammatory affections occurring in persons of delicate habits, or in children. Combined with tonics, its cathartic properties are said to be much increased.

D. & M. ex Aqua.—Of the pulp, ʒss. to ʒij.—*Electuarium Cassiæ*, D. *Confectio Cassiæ*, L. (Cassia pulp (recently expressed, D.), ʒss.; manna, ʒij.; tamarind pulp, ʒss.; syrup of orange (of rose, L.), ʒiss.; bruise the manna, and dissolve it (with a gentle heat, D.) in the syrup; then add the pulp, and evaporate (slowly, D.) to a proper consistence.) Dose, ʒij. to ʒj.

CALENDULÆ COMPOSITÆ SEMINA, E. L. COLLECTIONS ANTHEMIDIS, RUTÆ ET SERPYLLI, D. *The carnosa (bulb*, D.) *and seeds of Colchicum autumnale. Meadow saffron.*—A common indigenous plant, belonging to the natural family *Melanthaceæ*, and to the Linnæan class and order *Hexandria Trigynia*.

E. C.—Carnosa (fragments varied fatty matter, covered with a thin, tunic membrane, pierced in the middle of summer by a long scabrous, whitish stamen, terminated by the germen, grows rapidly and swells up in autumn a rather pale or flowering stem, terminating in a pale purple, somewhat funnel-shaped flower open then, and the seed-vessel which remains under ground ripens by with the stem, bearing one or more leaves, in the succeeding January or March.

E. C. & M. ex Pulv.—The carnosa should be gathered about the end of July or beginning of August, before it has sent up the flowering stem; the outward coat-ing is to be carefully cut off, the slices, the dry crust having been previously scraped. The slices are dried in a hot place, exposed to the air, with a tow and threading [?]. The seeds are gathered when ripe.

P. C.—Colchicum carnosa is ovoid, about the size of a large walnut, composed on one side, convex on the other; it may be distinguished from bulbous roots by being solid, and not composed of tunics or scales. The dry slices are of a grayish-white colour, and horn. The seeds are small, rough, nearly round, and of a dark-chestnut colour. Both seeds and carnosa are odourless, but have a bitter, acrid taste.

C. P.—The carnosa consists of fatty matter, a volatile acid, a peculiar uncrystallizable alkaloid, named *veratria* (which will be described under the head of General Stimulants), combined with gallic acid, starch, gum, inulin, and ligain (Pelletier and Caventou). The composition of the seeds is probably nearly the same. The active principles are extracted by water, alcohol, vinegar, and wine.

To Table to adulterations, the dried slices should be firm, and solubed only on one side; a fresh-scraped surface, moistened with vinegar, and tincture of guaiacum dropped on it, should be turned blue.

T. E.—The most constant effect, noticed, in general, the only sensible one, of colchicum is purging, its cathartic operation being accompanied with great depression of the circulation and much nausea. In large or frequently repeated doses, it produces nausea, vomiting, and hypercatharsis; and in small doses it is held by many to be diuretic, but this effect is uncertain. The principal diseases

to which colchicum has been employed are gout and rheumatism, for the former of which it has acquired the character of a specific. A medicament during a paroxysm of gout, it relieves pain, moderates the pulse and clears the tongue; but, as in the preceding case, it does not shorten the fit; but, as in the former, by means of the stool, most practitioners agree that the employment of colchicum renders the system more predisposed to the disease; indeed, frequently gives rise to irregular or atonic gout. In acute rheumatism, the employment of colchicum should be restricted as in gout; but in some of the chronic forms of the disease, especially gouty rheumatism, it is often used to produce convulsions with benefit. Colchicum has also been employed as a purgative and diuretic in dropsy, and as an antiphlogistic in febrile and inflammatory diseases; but in the present day its use is almost entirely confined to gout and rheumatism.

U. & M. DE ABR.—In the administration of colchicum, one of its preparations, we should always begin with small doses and increase them very gradually, as an overdose rouses more or less violent or delusive powers, and, besides, the gastro-enteric and cerebral system differ much in activity. It is seldom used at the present day in powder; the dose is from gr. j to gr. viij; the powder of the seeds should be preferred to that of the corms, as being more active.—*Lond. Colchic. D. L. E.* Fresh colchicum corms, bruised, ℥ij; distilled vinegar, fʒviij; proof spirit, fʒj; macerate the colchicum in the vinegar for three days in a covered glass vessel, press strong, and set aside, that the dregs may subside; add the spirit to the clear liquor.]

[U. S. P.—Colchicum root, bruised, ℥ss; distilled vinegar, a pint; alcohol, a fluid oz. Macerate the colchicum root in the vinegar in a close glass vessel seven days; express the liquor and set it aside, that the dregs may subside; lastly, pour off the clear liquor, and add the alcohol. Dregs acetic acid may be substituted for the distilled vinegar.]

The preparation is preferred by Headington to any other for gout; he recommends it to be combined with magnesia, to neutralize the acid. It is, however, of more uncertain strength, as an ingredient of lotion frequently prepared with the dye-tubs. Dose, ten to fifty, frequently repeated.—*Edinburgh Colchic. Powder.* L. (Fresh colchicum corms, ℥j.; beaten with a little water and some starch, press out the juice and evaporate in a water-bath to proper consistence.) Dose gr. j. every three or four hours, with opium and *Edinburgh Colchic. (acid) ointment.* L. E. (Fresh colchicum corms, ℥j.; lard (prepared, ℥j.; beat, with the addition gradually added the acid; expose the juice and evaporate it in a porcelain vessel set placed with boiling water bath, ℥j. to a due consistence.) Dose gr. j. pro re nata, at three times a day. Make use gall ointment, equal parts of extract of conium.) A form of ointment employed in gout and rheumatism.—*Acetated Colchic. (acid) Ointment.* U. S. (Lard, one part; bees-wax, one part; distilled vinegar, two parts; boil down, by weight, fifty parts of the ointment with the

spirit in a glass vessel for one day; express strongly and add the liquor; and boil down the mixture to the consistence of a syrup, frequently stirring with a wooden spatula.) Dose, ℥ss., gradually increased to ℥j., twice a day; not much used.—*Tinctura Colchici* (tincture, U. S. P., *Colchicum seeds* [*bruised*, U. S. P.; *powder*, Lond.] ℥ij., *proof spirit* [*rectified spirit*, Lond.] Oj.; *macerate* for 14 days, and strain. D. L. P. "to be prepared like tincture of cardamom, and percolation is much more convenient and speedy than digestion." U. S.) Dose, ℥ss., gradually increased to ℥ij., twice daily.—*Tinctura Colchici semin.* L. (*Colchicum seeds bruised*, ℥v.; *aromatic spirit of ammonia*, Oj.; *macerate* for 14 days, and strain.) Dose, min. xx. to min. xxx., three times a day; seldom used.—*Vinum Colchici*, L. P. (*Colchicum corm*, *dried and sliced*, ℥vij.; *sherry wine*, Oij.; *digest* for 14 (7, P.) days [*express strongly the residuum*, L.], and strain.) It may be prepared with the seeds (*Vinum seminum colchici*), using the same proportions: a preferable preparation, as being more uniform. Dose, ℥ss., gradually increased to ℥j., three or four times a day.—*Succus Colchici* is prepared by expressing the juice from the fresh corm, allowing it to stand 48 hours, to deposite the feculæ, and mixing to the clear liquor a fifth of rectified spirit. This is a more active preparation, and keeps well. Dose, min. v. to min. xx.

In cases of poisoning with colchicum, emetics, followed by decoctions of bark, should be immediately administered; and if opium be present, brandy, ammonia, coffee, and other powerful stimulants should be given. The vegetable astringents have been recommended as antidotes, tannin and forming an insoluble precipitate with veratria.

Cucumis sativus, D. L. P., *Cucumber. Pulp* (*fresh*, L.) *of the fruit of Cucumis colocynthis.*—This plant, the bitter cucumber, is a native of several parts of Asia and Africa, and is cultivated in Greece and Spain. It belongs to the natural family *Cucurbitaceæ*, and to the Linnæan class and order *Monœcia Syngenesia*.

C. P.—The pulp of the dried fruit, which is the officinal part, is [illegible] white colour; it is without odour, but has an intensely bitter, nauseous taste; it is light, spongy, porous, and so tough as to be with difficulty reduced to powder. The imperfect fruit (*Bitter Cucumbers*) is imported in small quantities into England, but is only used by druggists in show-bottles.

C. P.—Colocynth pulp [*residuum*] is peculiar bitter matter, which has been named *Colocynthin*, and on which its purgative property principally depends, resin, gummy matter, and salts also. It yields its active properties to both water and alcohol.

Dilute, 3ij boiling water, 3vj ; boil for ten minutes, strain, and add sulphuric ether, 3ij ; syrup of orange-peel, 3ij). Both these preparations are given in doses, first, two or three times daily.

CROTON TIGLIUM, L. Tribe 6, CLASS I. *Crotonea Vera*, R. *Croton oil*. *Expressed oil of the seeds of Croton Tiglium*.—A native of the continent of India, the Moluccas Islands, and Ceylon; belonging to the natural family *Euphorbiaceæ*, and to the Linnæan class and order *Monœcia Monadelphia*.

B. C.—A moderate-sized tree, with a smooth bark, [illegible] ; leaves [illegible] ; male [illegible] ; female [illegible] ; fruit ovate and triangular, [illegible] ; seeds [illegible].

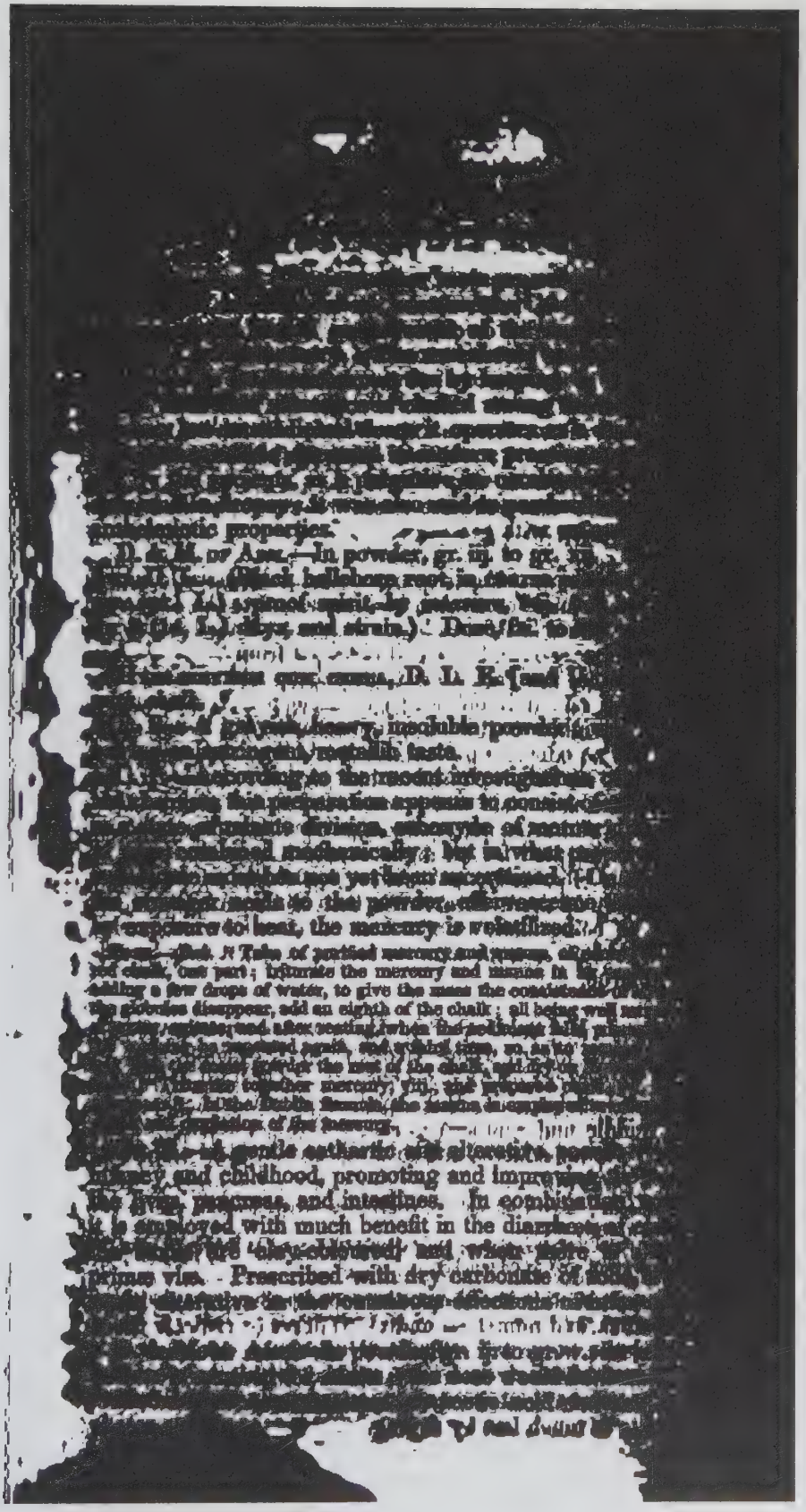
P. P.—*Croton seeds* (*Grana tiglii*) are of an irregularly-oval shape, about 6 lines long, 2½ lines thick, and 3 lines broad; they are of a grayish-brown colour, and marked with the ramifications of the raphe; they contain, internally, a pale yellowish-white albumen, which envelops the embryo with its large, leafy cotyledons. From the kernels croton oil is obtained by pressure; it is thicker than castor oil, of a pale amber colour, has a feeble, sickly odour, and an intensely acrid taste. The kernels yield about half their weight of oil.

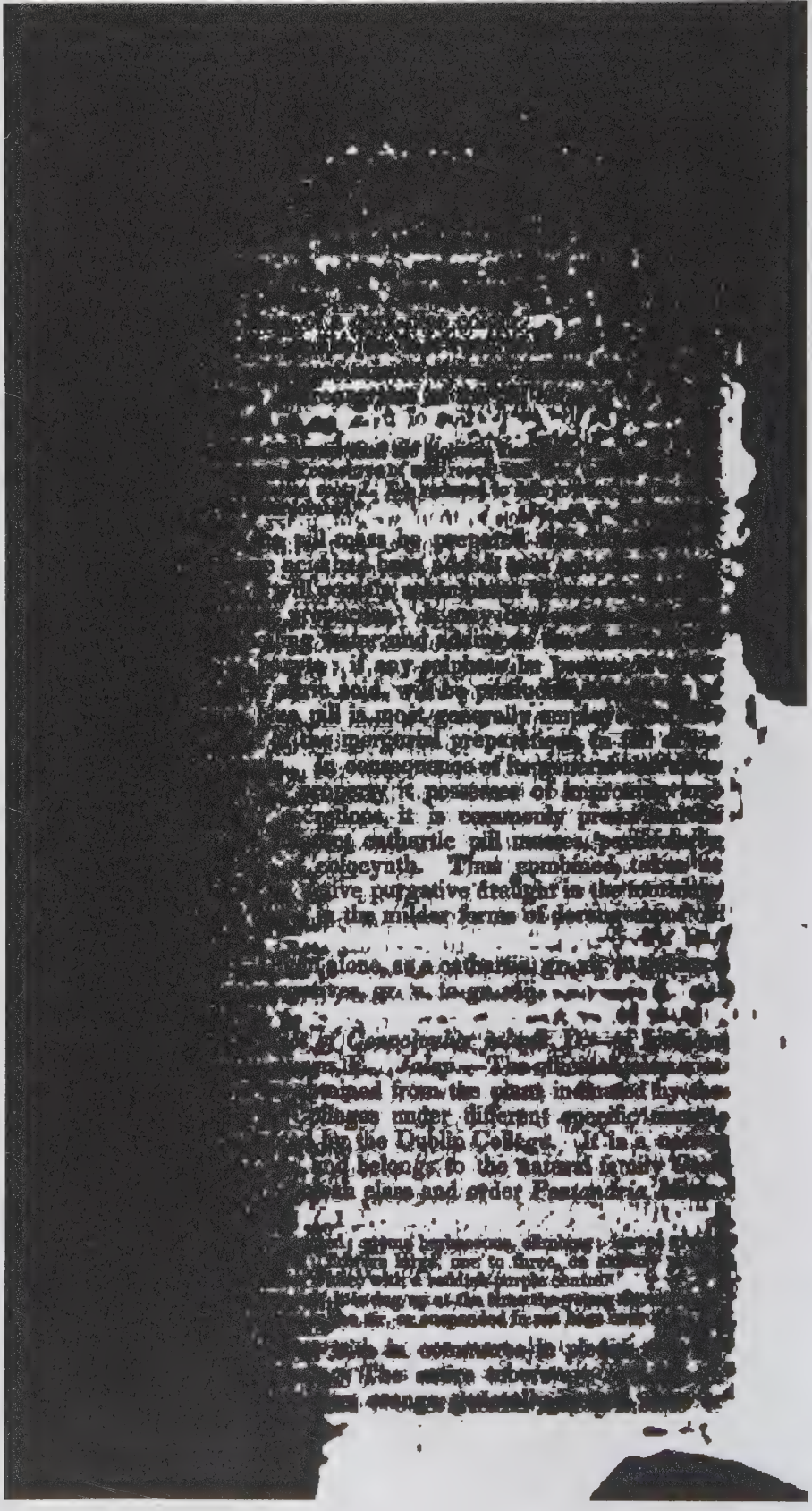
C. P.—*Croton oil* consists of a peculiar acid named *Crotonic acid*, dissolved in a bland fixed oil; it is to the acid that the purgative of the oil are due. Croton oil is insoluble in alcohol, even with the aid of heat, but is very soluble in sulphuric ether, and in the fixed and volatile oils.

Adulterations.—Castor oil is the only substance employed to adulterate croton oil; it may readily be detected by its solubility in alcohol, the test adopted by the Edinburgh College: "when agitated with its own volume of pure alcohol and gently heated, a clear oil separates, on standing, without having undergone any apparent decomposition."

T. E.—*Croton oil* is an acrid cathartic, operating speedily, and producing frequent watery evacuations; it does not in general give rise to nausea or griping, and is, consequently, to be preferred in most cases to other cathartics of equal power. It is used chiefly to obviate constipation in comatose affections, and in dropsy; in the various forms of convulsive and neuralgic diseases, it is a most valuable cathartic; given in frequently-repeated small doses in such affections, I have in several cases found it a complete specific. Croton oil should not be employed in extreme debility, or where there is any tendency to inflammation in the digestive organs.

D. & M. or ADM.—Min. j or min. ij. In cases where the patient is unable or unwilling to swallow, it may be dropped on the tongue, or dissolved in ether, it may be rubbed on the abdomen. Croton oil should, however, it should never be administered in a fluid form, as it causes a most disagreeable local impression in the [illegible] ; it may be made into pill with crumb of bread [illegible] ; one or two minims may be added to any





pills, and *send for powder, etc.*" L.) *Dose*, gr. x. to 9i.—*Extractum seu Resina Jalapæ*. E. (Take any convenient quantity of jalap in moderately fine powder, mix it thoroughly with enough of rectified spirit to moisten it well, put it, in 12 hours, into a percolator, and exhaust the powder with rectified spirit; distil off the greater part of the spirit, and concentrate the residuum over the vapour bath to a due consistence.) This is the impure resin; the dose is from gr. ij. to gr. x.; it should be given in a state of minute division, for which purpose it may be rubbed with sugar or starch, mild powder, or made into an emulsion with milk, sugar, and *Acacia*.—*Sapo Jalapinus*. Pr. (Castile soap and jalap resin, equal parts; rectified spirit, q. s.; dissolve, and evaporate with a gentle heat to the consistence of a conserve.) *Dose*, gr. xx. to 9ss., for adults; gr. iij. to gr. vj., for children.—*Tinctura Jalapæ*. D. L. E. (Jalap, in coarse powder (brayed, L.), ʒvij. (3v., L.; 190., E.); proof spirit, *by measure*, Oij. (Oj., L. E.); macerate for 7 (14, D. L.) days, and strain; "or may be prepared by percolation." E.) *Dose*, ʒj. to fʒiv.—*Scrupi et Jalapæ*. P. (Jalap, 20 parts; coriander and fennel seeds, of each 1 part; water, 200 parts; sugar, 100 parts; mix. *Dose*, Oij. to fʒiv.

[Juglans cinerea, U. S. P. (*Butternut. Monœcia Polyandria. Juglandeæ.*)

P. & C. P.—The inner bark fibrous; bitter and slightly acrid taste, but little odour; yields all its virtues to boiling water.

T. & L.—Cathartic, analogous in its action to rhubarb, and often useful in habitual constipation.

D. & M. or Ame.—The powder made of the inner bark of the root is given in doses of 10 to 30 grs., as a cathartic, or 5 grs. repeated, as a laxative. It is usual to combine it with calomel for purgative purposes.—*Extractum Juglandis*, U. S. P. Take a pound of the inner bark of the root, reduced to coarse powder, pour upon it a pint of water, let it stand for 24 hours, and treat it by displacement, pouring more water upon it, until it passes but slightly impregnated with the root. Then heat the filtered liquid to the boiling point, strain, and evaporate to the proper consistence. *Dose*, 5 grs. to a scruple.]

Lilium catesbæum, P. *Purging lily*.—A slender herbaceous annual from two to six inches high, with small white flowers, drooping before expansion. It belongs to the natural family *Liliaceæ*, and to the Linnæan class and order *Pentandria Monogynia*. The whole herb is officinal; it is void of odour, but has an intensely bitter taste. It was formerly held in high esteem as a cathartic and alterative, at present it is never used in regular practice, and has only been cultivated in the Edinburgh Physic Garden on the authority of Dr. Cullen, as a useful antigonous cathartic, in doses of a drachm of the powder, or an infusion of two or three drachms of the herb.

Magnesia. *Magnesia* [illegible] is [illegible] a gentle [illegible] [illegible] by an excess [illegible] quantity of free acid in the stomach, by [illegible] soluble magnesian salts. It does not [illegible] the secretions [illegible] by stimulating their [illegible] [illegible] of their contents. Magnesia is very generally employed as a purgative in infantile diarrhœa, and by females and persons of delicate habit of body; it is most usually combined with [illegible] combination frequently employed, and with much benefit, in the early stages of diarrhœa, particularly when dependent on a [illegible] or acidity of the primæ viæ. Magnesia, when taken for a [illegible] period, has in some instances accumulated to a great extent, and even caused convolutions in the bowels. When it is thought advisable, therefore, to continue its use for any time, it will be necessary occasionally to administer an active cathartic. Dose, [illegible] to adults; gr. ij to gr. x., for children.

Magnesiæ carbonas, Carbonate of Magnesia (directed in the division Antacida), is a still milder cathartic; it is employed in the same cases, but is less frequently used than [illegible] requirement its purchasing flatulence from the decomposition of the [illegible] acid in the stomach. Dose, ℈ij to ℈j., for adults; gr. x. to [illegible] for children. A mildly laxative, effervescing draught may be prepared with a drachm of carbonate of magnesia, the juice of one lemon, and a wine-glassful of water.

Magnesiæ sulphas, U. S. P. Sulphate of Magnesia. [illegible] Salt.—*Magnesiæ sulphas exsiccatus, U. S. Dried Sulphate of Magnesia.*

P. P.—Usually met with in small regular crystals, transparent and colourless; prismatic; with an extremely bitter [illegible] taste. By slow crystallization, tolerably large crystals are readily obtained; their form is the four-sided rhombic prism with pyramidal dihedral summits, or four-sided pyramids. Sp. gr. 1·75.

C. P.—It is composed of 1 eq. of magnesia, 1 of sulphuric acid, and 7 of water [*Mg* O, *SO*^{3}, HO + 7 HO]. It is permanent in the air, but is slightly efflorescent. [illegible] at a temperature considerably under 300°, and fusing in its own water of crystallization; if the temperature be raised still higher, it loses the [illegible] and [illegible] the [illegible] acid, and [illegible] compound. It dissolves in its own weight of water at 60°, and in [illegible] three fourths of its weight of boiling water. It is insoluble in [illegible]

[illegible] made of the Hamel's Medical [illegible] [illegible] [illegible]

are mere vehicles of magnesia, which, being very disagreeable, is rarely employed. On the Continent, in the present day, and formerly here as Ireland, crystals of sulphate of soda, which is a much cheaper salt, are frequently mixed with those of sulphate of magnesia; this sophistication is best detected by the test of the Ars. Pil., which is appended to show that the full proportion of magnesia is present. Two grs. dissolved in ℥j. of water, and treated with solution of carbonate of ammonia, are not entirely precipitated by two minims of solution of phosphate of soda (1 of salt to 99 water)."

To ℈j.—*Sulphate of magnesia* is a refrigerant cathartic, operating mildly, but effectually, augmenting the secretions, and promoting the peristaltic action of the intestinal canal; the evacuations are watery, and are not accompanied with much nausea or griping. It is, consequently, more generally employed at present than, perhaps, any other medicine of this class; it has also the advantage of great cheapness. This salt is peculiarly adapted for all forms of febrile and inflammatory affections, especially when accompanied by constipation. In short, there are but few diseases in which cathartics are indicated that it may not be employed with benefit. Sulphate of magnesia forms the active ingredient in many mineral waters.

℞. ℥ M. or Axiæ—℥ss to ℥j., dissolved in seven or eight times its weight of water. Its cathartic properties are promoted by dilution, therefore a smaller dose thus used will suffice; dissolved in a large quantity of water, tincture of some aromatic bitter, as of cascarilla, calumba, orange peel, &c., is added with advantage to the stomach to prevent its nauseous taste; this is best done, however, by the addition of ten or twelve minims of dilute sulphuric acid, or by administering the salt in the acid infusion of roses, an elegant and beneficial form in febrile diseases.—*Pereira Mat. Med.*

℞. Potassæ nitratis et sodæ sulphatis, of each, ℥vj.; sulphatis magnesiæ, ℥ij.; dry the salts with a gentle heat, and pulverize them separately; then triturate them well together, and keep in a well-closed vessel.—Dose, ʒij. to ʒvi. dissolved in One pint of water. In the preparation of this powder, instead of the sulphate of potash I have employed ʒvi. of sulphate of soda, and found the resulting compound a more effectual cathartic in smaller doses to be dissolved in a half pint of water, and taken in the morning before breakfast, operating freely, and with perfect safety.—*Dr. Thomson, Ed. Dis.*

(Mistura, ℈j.) dissolve in ten fluid ounces of decoction of chamomile and wild olive oil, ℥ij.; and sulphate of magnesia, ʒij.—℞. (Olivæ ol. ℥j.) sulphate of magnesia, ʒvi.; sugar, ℥ss.; water, ʒvi.; boiling water, ℥xvi.; mix the gums in the water for an hour; then dissolve the salt and the sugar, and add the oil. A mild cathartic enema for general purposes.

Carbonates.—*The alkalies* and their carbonates form water; chloride of calcium; the acetates of lead; and nitrate of silver. The bicarbonates of the alkalies are not incompatible with sulphate of magnesia unless in the composition of saline mixture.

M. P. L. E. *Compositi foliorum* Pentaphyllum L. *Potentilla* L. *Rosa canina* (probably from various species of *Fragaria* and *Orosa*, L. The genus *Fragaria* and *Orosa* (two which seem a sufficient but not yet well established), that indicated by the first and Calyx tube different genus is a native of the South of Europe, chiefly of Spain and the south of Italy. It belongs to the family *Rosaceæ*, and to the Linnean class and order *Icosandria Polygynia*.

P. P.—Two of the are commonly met with in Europe, the Wild strawberry, *Fragaria vesca*, it occurs in woods and hedges, has one to six leaflets in length, and one of two upright or ascending, naked, pedicels, and leaflets of a thin yellowish green colour; presenting a furrow on the surface by which they are folded in the bud, by which also they are easily distinguished from the Hautboy strawberry, which is larger, and has a thick, roundish, leaflets, and a smooth surface, and is also of a very different season. *Fragaria Virginiana*, it is in all, viz. of the green, yellow colour, much hairy, and grows only in the colder or more mountainous parts of the country, and its fruit is very small.

C. P.—Mature consists of a perfect vegetable juice, called *Vinosity*, and established sugar, gummy matter, albumen, tartar, and moisture. It agrees with the fruit of the former, but is somewhat a little higher; it is soluble in water, and in 80, and in eight parts of rectified spirit. Malic acid, principle, may be obtained by boiling mature in water, and filtering off the liquor, from which, as it cools, the mature is deposited; it exists in mature in the proportion of about the pounds.

Make mature, which is often employed in medicine, is composed of whitewash.

Th. E.—Mature is a very mild laxative, proper for children and delicate females, in the proper dose it seldom disappointed when being carefully used in bilious and scorbutic mixtures. When first gathered, mature does not possess its laxative properties, and is employed as a medicine only in the countries where it is produced.

D. & M. of Ar.—For children, to 40 gr. [illegible] 3ij.—Mature, for children, to 10 [illegible] Mature, Mature, Mature, &c. [illegible] Mature, Mature, Mature, &c. [illegible] Mature, Mature, Mature, &c.

secreted by the bee, an insect belonging to the order *Hymenoptera*: in the honey-bag of the insect, which is a dilatation of the œsophagus, it probably undergoes some alteration previous to its deposition in the cells of the honeycomb. Honey is too well known to require any description; it is composed of grape-sugar, cane-sugar, gummy matter, acetic acid, aromatic principle, wax, &c. It is sometimes adulterated with sand, with starch, or with wheaten or pea flour; the first adulteration may be detected by dissolving in water; the others by the action of tincture of iodine on the cooled decoction, which is rendered blue if any starch be present. Dissolved in a large quantity of water, honey possesses demulcent and cooling properties; in a small portion of water it operates as a mild laxative. It is now but little used in medicine; nevertheless, taken at breakfast, it is found very beneficial by persons liable to habitual constipation. Honey has in some instances proved poisonous, in consequence of having been collected by the bees from poisonous flowers. By boiling honey in a vapour-bath and removing the scum, clarified honey, *Mel Depuratum*, D., is prepared. Both the flavour and odour of honey are injured by this process.

Olea [a name, D. L. E. *Oil expressed from the fruit of the pericarp*, P.] *of Olea Europæa.*—This tree, originally a native of Asia Minor, now grows freely on the borders of the Mediterranean, and is cultivated all over the South of Europe, especially in Provence. It belongs to the natural family *Oleaceæ*, and to the Linnæan class and order *Diandria Monogynia*.

[illegible] carefully sorted, free with hard, stoned fruit; leaves in pure, pale [illegible] green, giving a saline character to the water; stones small, [illegible] dark-brown grain, with a [illegible] cyl. principally non-oiled.

F. C. & M. or Pure.—The first seven of the oil are obtained by simply pressing the fruit, cut [illegible] in a mill; a second sort, by moistening the marc, put after the first operation, with boiling water and repressing it; and a third and very inferior sort, by boiling the refuse in water, and submitting it to very strong pressure.

F. P.—Olive oil is a transparent, unctuous fluid, of a yellow colour, pale or greenish according to quality (the finer sorts being of a [illegible] shade); when good, odourless, with a bland, oily taste. By keeping it acquires both a rancid odour and taste, more slowly however, than the other fixed oils. Sp. gr. .911 at 77° F.

C. P.—It is composed of 72 parts of *olein* and 28 of *margarin*. Olive oil readily saponifies, but exposed to the air, even in thin layers, it thickens, but does not dry. It congeals at 36° F., is insoluble in water or in alcohol, but at 50° it dissolves in 1½ times its weight of ether.

Adulterations.—Cheaper vegetable oils are commonly employed to adulterate olive oil, as poppy oil and rape-seed oil. The best test for ascertaining the purity of that of Pondi, adopted in the last edition of the Edin. Pharm., "Mix with a twelfth of its volume of nitrate of mercury, prepared by dissolving with a gentle heat, 72 of mercury in 71 of nitric acid (density 1.280 to 1.310); if pure, it becomes in [illegible] hours like a firm fat, without any separation of fluid oil." For ordinary purposes, the presence of other

[illegible] ...

Ta. Ib.—It is seldom given by the [illegible] as a substitute for [illegible] or [illegible] ...

D. & M. as Ana.—[illegible] by the number [illegible] ...

[illegible] ... Mus apple, Mountain, U. P. Indigenous. *Podophyllum Montanum.*

P. & C. P.—The fruit is of a greenish, mineral tint; the [illegible] the root, when powdered, has a [illegible] ... taste, at first sweetish, becomes bitter, acrid, and [illegible] ... irritates a bitter principle called *podophyllin.*

Ta. P.—It is analogous to jalap, but which it is [illegible] ... stillated, an active hydrogogue cathartic, and has proven [illegible] ...

D. & M. as Ana.—Dose of the powder [illegible] ... gos., either alone or in combination with [illegible] ... *Preparation.*—Prepared as jalapy which see. Dose [illegible] ... Therapy.—Ibid. Dose, ii to vi. Gr. (0.06 to 0.3 Gm.)

POTASSÆ ACETAS, U. S. P. *Acetate of Potash.*

P. P.—Masses of white, needle-shaped, silky crystals, [illegible] ... less when dry, but emitting a faint aromatic odour when [illegible] ... they have a pungent, somewhat acrid, but cooling taste, and are [illegible] ... soapy to the hands. Sp. gr., 1.40.

C. P.—It is composed of 1 eq. of potassa and 1 of [illegible] ... acetic acid ($KO,C_4H_3O_3$); it deliquesces on exposure to the air, and is very soluble both in water and in alcohol. It has been found and then decomposed, *pyroxenic spirit* is driven off, and *carbonate of potash* left.

Prep.—*Dil.*—Add gradually to any quantity of [illegible] ... from vegetable or mineral, until the [illegible] ... is neutral [illegible] ... heavy when the effervescence shall have ceased, add [illegible] ... grains for every fluid ounce, add by degrees another teaspoonful [illegible] ... more, stir well and set aside for [illegible] ... the [illegible] ... filter and evaporate [illegible] ... on cooling, white crystalline mass, [illegible] ... [illegible] ... and [illegible] ... Dr. Griffith directs it to be prepared by [illegible] ... saturation of potash or potash, and [illegible] ... [illegible] ... IV.—As a substitute for [illegible] ... [illegible] ... [illegible] ...

Solvent.—The mineral acids and their soluble salts, and tartaric acid.

Potassæ bitartras. D. L. E. *Bicarbonate of Potash.*

E. P.—In weight, transparent crystals, which belong to the right prismatic system, odourless, with a very acid and bitter taste. Sp. gr. 2·103.

C. P.—It is composed of 2 eq. of sulphuric acid, 1 of potassa, and 1 of water ($HO, SO_3 + KO, SO_3$); the excess of acid acting upon metals and alkaline bases very much as if it were free. The crystals are permanent in the air, and are soluble in about twice their weight of water at 60°; the solution has a strongly acid reaction. By a red heat, the water of crystallization and half the acid are expelled, and sulphate of potash remains.

Test.—Dissolve 1 drachm of sulphuric acid, one part of carbonate of potash (one grain), and the remaining seven parts of water; then add to the solution a sufficient quantity of the carbonate of potash, and one part of the carbonate of potash mixed with the quantity taken and the whole part of the sulphuric acid; add carbonate (by heat) so that crystals may begin to appear." *Lond. Disp.*—"Take of the salt which remains after the purification of nitric acid, five ounces; rain water, a pint; dissolve the salt in the water, add the acid, and crystallize. Then evaporate the solution, and set it aside that crystals may be formed."

Not liable to adulteration.

Th. E.—Rarely employed in medicine; it operates as a mild cathartic, and as its other effects are small, it may be used with advantage in cob-blooded habits; combined with rhubarb, it overcomes much of its nauseous taste and promotes its cathartic properties. Dr. Barker proposed a solution of 72 grs. of this salt mixed with a solution of 72 grs. of carbonate of soda as a cheap effervescing purgative draught, but it forms an extremely nauseous compound.

D. & M. of Ass.—Gss. to ʒss., dissolved in from ʒiij. to ʒvj. of water.

Incomp.—Alkalies; earths, and their carbonates; metallic salts; and tartaric acid.

Potassæ supertartras. D. L. E. Tartari Crystallus. D. *Bitartrate of Potash; Crystals of Tartar; Crude Tartar; Cream of Tartar.*

E. P.—This salt is met with in the form either of a fine white powder or a semitransparent crystalline mass, the crystals being oblique rhombic prisms; it is without odour, but has an agreeable acid taste. Sp. gr. 1·643.

C. P.—It is composed of 1 eq. of potassa, 2 of tartaric acid combined in the crystallized state with 1 of water ($HO, KO, HTaO_5$); it is soluble in the air, is soluble in 180 parts of water at 60°, and in 18 parts of boiling water, the solution having a strongly acid reaction. By heat the salt is decomposed, and a carbonate, or a compound of charcoal and carbonate of potash. *Ehrd. Lond.*

Test.—"Dissolve a portion of the powder in water. To a portion of the solution add a few drops of solution of chloride of barium; no precipitate will appear. To another portion add a few drops of solution of chloride of calcium; no precipitate will appear. To another portion add a few drops of solution of nitrate of silver; no precipitate will appear. To another portion add a few drops of solution of chloride of platinum; no precipitate will appear. To another portion add a few drops of solution of acetate of lead; a white precipitate will appear. To another portion add a few drops of solution of bitartrate of potash; no precipitate will appear. To another portion add a few drops of solution of sulphate of potash; a white precipitate will appear. To another portion add a few drops of solution of sulphate of soda; no precipitate will appear. To another portion add a few drops of solution of sulphate of magnesia; no precipitate will appear. To another portion add a few drops of solution of sulphate of zinc; no precipitate will appear. To another portion add a few drops of solution of sulphate of copper; no precipitate will appear. To another portion add a few drops of solution of sulphate of iron; no precipitate will appear. To another portion add a few drops of solution of sulphate of manganese; no precipitate will appear. To another portion add a few drops of solution of sulphate of nickel; no precipitate will appear. To another portion add a few drops of solution of sulphate of cobalt; no precipitate will appear. To another portion add a few drops of solution of sulphate of chromium; no precipitate will appear. To another portion add a few drops of solution of sulphate of uranium; no precipitate will appear. To another portion add a few drops of solution of sulphate of vanadium; no precipitate will appear. To another portion add a few drops of solution of sulphate of molybdenum; no precipitate will appear. To another portion add a few drops of solution of sulphate of tungsten; no precipitate will appear. To another portion add a few drops of solution of sulphate of titanium; no precipitate will appear. To another portion add a few drops of solution of sulphate of tantalum; no precipitate will appear. To another portion add a few drops of solution of sulphate of niobium; no precipitate will appear. To another portion add a few drops of solution of sulphate of pelopium; no precipitate will appear. To another portion add a few drops of solution of sulphate of ilmen

Antimonium.—This salt is the result of powder is very much adulterated; the substance which was employed for this purpose was finely-powdered metallic zinc, sometimes of pewter, and even as much as one-fourth. The test of its purity is [illegible] these impurities: "Entirely soluble in the acid of sulphur. One part of it dissolved with gr. xxx of crystals and [illegible] of soda; and when that precipitated with gr. xxx of [illegible] of lead, the liquid remains precipitable by more of the acid."

Tar Ointment.—In tar ointment, made as directed [illegible] thereby, producing many watery crystals of sulphate [illegible] Wash them. It is seldom prescribed alone, but is prepared with [illegible] the milder vegetable authorities. Thus combined with [illegible] the form of ointment, it is an exceedingly useful preparation in [illegible] orthodial affections and in skin diseases; and with [illegible] is an excellent antiseptic in dysentery.

D. & M. or Anise.—[illegible] to wet, make into an [illegible] heavy or tenacious. Its solubility in water may be much [illegible] without impairing its medicinal activity, by adding to it a [illegible] its weight of benzoic acid.—*Effervescing powder with tartaric acid.* [illegible] tartaric. (Crystals of tartaric acid, 3ij.; carbonate of soda, [illegible] sugar, 3vij.) For use dose.

Infusion.—Lime-water; [illegible] the carbonate of lime; [illegible] of soda; acetate of lead; magnesia, and its sulphate.

Potassæ sulphas, U. S. P. *Sulphate of Potash.*

P. P.—A white salt, crystallizing usually in [illegible] rhombic dodecahedral prisms, terminated by six-sided pyramids; [illegible] a slightly bitter, saline taste. The crystals are very hard, and are therefore employed in pharmacy for triturating and dividing other saline powders. Sp. gr. 2·612.

C. P.—It is composed of 1 eq. of potassa, and 1 eq. of sulphuric acid (600, SO³); is unalterable in the air; fused is decomposed, but at a strong red heat fuses, but is not decomposed; it requires 16 parts of temperate and 4 of boiling water for its solution, but is insoluble in alcohol.

Potassæ Sulphas.—Dissolve the salt which remains after the [illegible] of nitric acid to a sufficiency of water; and by evaporation [illegible] to separate the crystallized salt. Lastly, [illegible] Caut.—Take care not to [illegible] with [illegible] which [illegible] a double salt, [illegible] which [illegible] the [illegible] and [illegible] the [illegible] and [illegible] the [illegible] and

not much employed. It is not adapted for children, as it is apt to produce vomiting in form of gives in a sufficient dose. Sulphate of potash is an excellent purgative for females after delivery, when we wish to diminish the secretion of milk.

D. & M. *ad Ass.*—½ to ¾vj. dissolved in warm water, or in powder combined with *flubarb.*—*Potassæ sulphas cum sulphure.* P. (Nitrate of potash and sulphur, equal parts, mix thoroughly, and project in small successive portions into a red-hot crucible; when the deflagration is over and the salt has cooled, reduce it to powder, and preserve in well-closed bottles.) A mild cathartic, much more soluble than the plain sulphate. Dose, ass to ʒj.

Incomp.—Nitric and muriatic acids; tartaric acid; chlorate of potash; chloride of barium; the acetate and diacetate of lead; nitrate of silver; and sulphate of magnesia.

Potassæ tartras, D. L. E. *Tartrate of Potash.*

P. P.—A solid, white salt, crystalline, but generally met with in the form of a granular powder; the crystals are small right rhombic prisms; inodorous, with a cooling, saline taste. Sp. gr. 1·956.

C. P.—It is composed of 1 eq. of potassa, and 1 of tartaric acid ($KO,C^8H^4O^{10}$); it attracts moisture in a damp atmosphere, but does not deliquesce; exposed to heat it is decomposed, and converted into a compound of carbonate of potash and charcoal. It is soluble in an equal weight of cold water, whence the name *soluble tartar* is applied to it; it is likewise soluble in alcohol.

Process.—Dis. "Carbonate of potash from pearlash, 8 parts; bicarbonate of potash, 24 parts; boiling water, 32 parts; to the carbonate of potash dissolved in water add gradually the bicarbonate of potash in very fine powder; evaporate the liquor, previously filtered through paper, and set it aside, that crystals may be formed by cooling." *Lond. Rules.* "Bicarbonate of potash, in powder, five ounces avoirdupois; pure carbonate of potash, one ounce avoirdupois; boiling water, two pints; dissolve the carbonate in the boiling water, and add the bicarbonate till the liquor is neutralized; filter and boil down the liquor; and recrystallize by setting it in a cylindric flask in the sunshine, and put a cork into the vessel that crystals may be formed." "The liquor being poured off, dry them, and again evaporate the liquor, that crystals may be produced."

Adulterations.—This salt is sometimes adulterated with the bitartrate, which may be known by its not being soluble in its own weight of water at 50°.

Tr. E.—A mild but efficient purgative, not much employed at the present day. By accelerating the operation of the resinous purgatives, it corrects their griping properties.

D. & M. *ad Ass.*—ʒij. to ʒx., in solution.

Incomp.—All acids, and most insoluble salts; lime-water; chloride of calcium; nitrate of silver; and acetate of lead.

Pruna, D. L. E. *Prunes. The dried fruit of Prunus domestica.*—The plum-tree, originally a native of Syria, is now naturalized throughout the temperate regions of Europe, and in the West Indies; it belongs to the natural family *Rosaceæ*, and to the Linnæan class and order *Icosandria Monogynia*. The fruits used in the arts, prunes, are imported from Bordeaux. They are mildly [illegible] and are sometimes added to infusion of senna to assist

the numerous tubes. They differ also in the disposition of the medullary rays of the Rhaponticums.

Rheum palmatum, L. *Rheum* L. *Rhapontica* Lindley, Ed. Bot. *Rheum palmatum* Linn. *Root of Rhubarb*, Lindley. *Root of Rhubarb* (Pharm. Lond.) Indigenous to the temperate forests belonging to the northern boundary of the Himalaya chain and other *Pontodrica Mountains*.

P. P.—The leaves are about the size of moderate hands, deeply lacerated with a green, juicy parenchyma; they have an astringent taste, and when bruised, a faint, unpleasant odour. The juice is preserved in the form of sheep.

C. P.—The juice consists of a peculiar colouring matter, gallic acid, oxalate, sugar, and nitrogenous matter. The nature of the purgative principle is unknown. By evaporating to dryness the juice mixed with lime, or with alum, the purgative property is lost.

Adulterations.—The barbary of the *Rheum frenopole* are often substituted for, or mixed with Lockhoro berries; they may be detected by being only two-seeded.

T. E.—The fresh leaves of their expressed juice possess powerful cathartics, producing many watery evacuations, in consequence of the severity of their operation, frequently accompanied by severe vomiting, thirst, and distressing nausea; although in bygone days much vaunted in the treatment of dropsy, they are at present scarcely ever used.

D. & M. or Ans.—Of the fresh berries, 10 to [illegible] *Rheum*, D. L. E. (Fresh juice of the berries, fl. ounces [illegible] (Dub., L. E.); ginger, sliced, and pimento, bruised (pounded, Ed.) of each, 10). (Dub., L. E.); let the juice and [illegible] the dregs may subside, and strain. Macerate for 24 (L. E.) hours the cinnamon and ginger in [illegible] (Dub., L. E.) of the strained juice, and filter; boil down the rest of the juice to [illegible] (Dub., L. E.), and with sugar (Dub., L. E.) form the [illegible] syrup). Dose, [illegible] to [illegible].

Rheum, D. L. E. *Rhubarb*; *Root of Rheum palmatum* and *Rheum undulatum*, D. *Root of Rheum palmatum*, L. [illegible] undetermined species of *Rheum*, E.—The exact species of the [illegible] drugs, from which the different varieties of rhubarb are [illegible] collected, is as yet unknown. They [illegible] mountainous regions of Asia, from the shores of the Caspian Sea [illegible] Chinese wall, and are cultivated in most of the countries of Europe. The genus is placed in the natural family [illegible] and Linnean class and order *Enneandria Monogynia*. [illegible] species produced in the Pontic provinces, the Chinese [illegible] believed to be of superior excellence to [illegible] [illegible] [illegible]

Wehlikanum; *R. Rhaponticum*; *R. Moserrhizon*, etc. *R. crassinervium*; *R. Emodi*; *R. Webbianum*, &c.

R. Canadense has sometimes been cultivated in botanic gardens, which seems to exhibit characters, namely very large, deeply lobed, and even at the upper extremity cordate; an herbaceous, branching stem, more than six feet high. Flowers small; calyx persistent, six-parted, withering.

R. Collinianum is the name, it is said, by which the plant is known in the country, which is described and delineated by Pallas in his account of the Kirgisian steppes, and which he considered to be a variety of *R. compactum*. Leaves cordate, palmated, somewhat lobed, and deeply divided; the lobes pointed, sometimes again divided; petioles hollowed towards the top, sometimes in the middle, sometimes deeply bifid; the whole of the leaves, petioles, and stem, are said to be covered with minute papillæ. Flowers in a compound panicle, with the branches of the panicle alternate, and the flowers disposed in whorls; the whorls are said to be generally six-flowered, sometimes eight-flowered, and sometimes only four-flowered. Pallas says that the plant is found in the Kirgisian steppes, and that the Kirgisians call it *Kolleen*.

R. Caspicum is a native of the Caspian steppes, and is described by Pallas as having a perennial root, which sends up several stems, usually very large, simple, striated, and even at the upper extremity naked; an herbaceous, branching stem, more than six feet high. Flowers small; calyx persistent, six-parted, withering.

R. Webbianum is the name, it is said, by which the plant is known in the country, which is described and delineated by Pallas in his account of the Kirgisian steppes, and which he considered to be a variety of *R. compactum*. Leaves cordate, palmated, somewhat lobed, and deeply divided; the lobes pointed, sometimes again divided; petioles hollowed towards the top, sometimes in the middle, sometimes deeply bifid; the whole of the leaves, petioles, and stem, are said to be covered with minute papillæ. Flowers in a compound panicle, with the branches of the panicle alternate, and the flowers disposed in whorls; the whorls are said to be generally six-flowered, sometimes eight-flowered, and sometimes only four-flowered. Pallas says that the plant is found in the Kirgisian steppes, and that the Kirgisians call it *Kolleen*.

P. P.—Three varieties of rhubarb are met with in British trade, each of which we shall consider separately, viz., Russian, Chinese or East Indian, and English rhubarb.

1. Russian Rhubarb.—*Turkey Rhubarb*, it is met with in irregularly-shaped pieces, from an inch to three inches in breadth, smaller ones, sometimes pierced on one side, angular, heavy, of a bright yellow colour, without any traces of epidermis, generally perforated with conical, not cylindrical holes, in some pieces extending completely, in others only partially through their substance; internally, they are compact, beautifully marbled with yellow, red, and white streaks or points; the colour is strong and peculiar; the taste is bitter, and finally astringent; chewed, it feels gritty under the teeth, owing to the presence of crystals of the oxalate of lime, and it stains the saliva yellow; it may be pulverized readily. The powder is of a bright-yellow colour. This description of rhubarb is collected by the Bucharians on the mountains of Tartary, brought by them to the Russian town of Kiachta for barter, whence it is conveyed to St. Petersburg, where it is sorted, packed into boxes or cases which are covered on the outside with a hide, and then exported to the different countries of Europe and to the British Isles.

2. Chinese or East Indian Rhubarb, is met with in globular or flat pieces, rounded, not angular on the surface, of a brownish-yellow colour, usually presenting some traces of epidermis; somewhat heavier than Russian rhubarb; perforated with cylindrical holes, in many of which are found pieces of cord, by which the root was suspended while being dried; internally they are close and compact, marbled and spotted yellowish-brown and whitish; the odour is somewhat stronger than that of Russian rhubarb, the taste similar; the powder is not of so bright a colour. This description is the product of the northern provinces of China; it is exported in chests directly from Canton or by way of Singapore.

3. English Rhubarb.—Two kinds are commonly met with: 1st. *Turkey Rhubarb*, which occurs in pieces about five or six inches long and six inches in diameter, round, striated, of a dirty yellowish-brown colour externally, blackish internally, with reddish streaks; of a feeble odour, and its taste astringent and gritty. 2d. *Thorned Rhubarb*; this sort is often sold for Turkey rhubarb, which it is supposed to resemble; but from, however, a closer examination

for children, gr. v. to gr. xij; for adults, 3ss. to 3j.—*Pulvis Rhei compositus* (Comp. B. (Rhubarb and carbonate of soda, of each ℥j; cylindric ℥ss; mix.) Dose, gr. x. to gr. xx.—*Pulvis Rhei cum Hydrargyro*, Grey's H. (Rhubarb, 3iv.; calomel and guiaiac, of each 3j.; mix.) Dose, gr. x. to gr. xx.—*Extractum Rhei*, D. L. (Rhubarb, bruised (powdered, L.), ℥ij. (3vss., L.); proof spirit, *by measure*, ℥x. (℥ij. ℥ij., L.); distilled water, *by measure*, ℥xvij. (Oviij., L.); maceerate for four days (with a gentle heat, L.), filter, and allow the dregs to subside; pour off the clear liquor and evaporate (when strained, L.) to a proper consistence.)—L. (Rhubarb, ℥j.; water, Cut and the rhubarb into small fragments; macerate for 24 hours in ℥iiss. of the water; filter through a cloth, express moderately; macerate the residuum with the rest of the water for 12 hours, filter with the same cloth as before, and express the residuum strongly. The liquors, again filtered if necessary, are then to be evaporated to a proper consistence in the vapour-bath.) Dose, gr. x. to 3ss.—*Pilulæ Rhei*, E. (Rhubarb, in fine powder, 9 parts; acetate of potash, 1 part; conserve of red roses, 5 parts; beat into a proper mass.) Dose, gr. v. gr. xv.—*Pilulæ Rhei comp.*, L. E. (Rhubarb, in fine powder, ʒj. (12 parts, E.); aloes, powdered, 3vj. (9 parts, E.); myrrh, powdered, ʒss. (6 parts, E.); soap, 5i. (6 parts, L.); oil of caraway, ℥ss., L.; oil of peppermint, 1 part, E.); (syrup, q. s. L.; conserve of red roses, 5 parts, E.); mix, and beat together to incorporate.) Mildly tonic and purgative. Dose, gr. v. to 3ss.—*Pilulæ Rhei et Ferri*, E. (Dried sulphate of iron, 4 parts; powder of rhubarb, 10 parts; conserve of red roses, 5 parts; mix.) Tonic and laxative, useful in chlorosis. Dose, gr. x. to gr. xv.—*Tinctura Rhei*, D. L. E. (Rhubarb, sliced (in coarse powder, E.), ℥iv., L.; ℥ij., E.); boiling (distilled, L.) water, *by measure*, ℥xx. (℥iss. ℥xviij., L.; ℥xviij., E.); macerate (digest, D.) for 2 hours in a vessel loosely covered (12 hours, and add ℥ij. of spirit of cinnamon, E.), and strain.) Stomachic, and very mildly laxative; a useful solvent for more active purgatives. Dose, ʒj. to ℥iv.—*Tinctura Rhei*, E. (Rhubarb, in moderately fine powder, 3viss.; cardamom seeds, bruised, 3ss.; proof spirit, Oj.; mix the rhubarb and cardamoms, and proceed by the process of percolation as directed for tincture of cinchona; or it may be prepared by digestion.) A cordial purgative, employed as an addition to cathartic mixtures, in doses of ℥ss. to ℥iij.—*Tinctura Rhei comp.*, D. L. (Rhubarb, sliced, 3ij. (3iss., L.); liquorice, bruised, ʒss. (℥vi., L.); saffron, ʒj. (3ij., L.); cardamom seeds, freed from their capsules and bruised, ʒss., D.; ginger, sliced, 3iij., L.) proof spirit, *by measure*, ℥ij. (Oj., L.); macerate for 7 (14, L.) days, and filter.) Uses and dose same as last preparation.—*Tinctura Rhei et Aloes*, E. (Rhubarb, in moderately fine powder, ʒiss.; Socotrine or East Indian aloes, in moderately fine powder, ʒvj.; cardamom seeds, bruised, ʒvi.; proof spirit, Oj.; mix the powders, and proceed as for tincture of cinchona.) A very mild purgative. Dose, ʒiss. to ʒj.—*Tinctura Rhei*, E. (Rhubarb, in coarse powder, ℥ij.; senella, in coarse powder, ℥j.; [illegible] Oj.; macerate, &c. [illegible], for 7 days, strain, express strongly,

and filter.] Stimulant and purgative. Dose, ℥ss to j.—Tinctura Rhei, U. S. (Rhubarb, 20 parts; boiling water, 200 parts; sugar, 5 parts; make a syrup.) Dose, f℥ss to f℥j.

[U. S. P.—*Tinctura Rhei* is *Rhubarb*. *Warner's Safe Diabetes*—Take of rhubarb, bruised, 1 oz.; senna, 2 drachms; anise-seed and fennel seed, bruised, each, 1 drachm; red sanders, sliced, 2 drachms; saffron and liquorice, each, ½ a drachm; cassia buds of their aqueous half a pound; dilute alcohol, 2 pints. Macerate for 14 days, express, and filter through paper. Antacid, stomachic, and laxative. Dose, 1 wine-glassful.]

[U. S. P.—*Aromatic Syrup of Rhubarb*.—Take of rhubarb, bruised, 3½ oz.; cloves and cinnamon, bruised, each, ½ oz.; nutmeg, bruised, 2 drachms; diluted alcohol, 2 pints; syrup, 4 pints. Macerate the rhubarb and aromatics in the diluted alcohol for 14 days, and strongly then, by a water-bath, evaporate the liquid to a pint, and while it is still hot, mix it with the syrup previously heated.]

[*Vinum Rhei Compositum*.—*Tinctura Digitalis*.—Rhubarb, root, 1 oz.; corn, sweet, sliced, 2 drachms; sem. sarcostem., 1 drachm; oleaginous root, ½ oz.; vinum, ℥j. Macerate for a few days and filter. Dose, ½ oz. to 1 oz.]

Incomp.—With the mineral acids—ammonia; carbonate of potash; lime-water; the mineral acids; tartar of iron; corrosive sublimate; tincture of the muriate of iron.

Rhus cotinus, U. S. L.—*Cotinus oil*; *Oil expressed from berries of Rhus cotinus*.—The cotinus tree is a native of Africa and the East Indies; it is cultivated at present very extensively in the West Indies, and in North and South America; it also grows in the South of Europe and in the British Isles. It belongs to the natural family *Rutaceæ*, and to the Linnæan class and order *Monœcia Monadelphia*.

P. C.—In southern countries, an herbaceous annual, with leaves, pedicels, and calyx as in senna; its stems elongate, branching, an abbreviated perennial, attaining a height of 30 to 40 feet; leaves large, of a dull green colour, glaucous, petiolate, pinnate, with seven lobes, serrated; flowers, in terminal panicles, pentandrous, pentapetalous, and very large, a dark-yellow tinge mottled with purple, veins and veinlets purple; the calyx are most showy (hence these trees have long been a favourite ornament of parks); the seed-vessel is pale gray, studded with blackish and glistening tubercles, and surrounded by a thick, downy, silky membrane, which forms a large and conspicuous, bushy canopy.

P. C. & M. in Pract.—The fixed oil of the pericarp, it is said, is employed in connexion with an ointment for the itch in Java, the membranous tissue separated from the seeds is boiled with water, and thrown into cold water, when it becomes white and tough. This is the common tallow-tree of the West Indies, and in the Java pharmacopœia is the first upon the list. In some parts of the East Indies, the membranous tissue is boiled and bleached, and again boiled with water, in the oil extracted from the seeds. In North America, the people are fond of roasting and eating the seeds, which have a taste like that of the chestnut. They make candles of the suet of the seeds.

U. S.—*Cotinus oil* is a viscid, oily liquid, of a pale yellow colour, inclining to green, of a peculiar odour and of a bitterish taste. It is obtained by pressing the seeds, and is used chiefly in making candles. Dose, f℥j to f℥ij.

C. T.—A stimulating oil, the seeds of which have been used

composed of three fatty acids, viz. *ricinic*, *oleic*, and *margaric*. Its ultimate constituents (according to Ure) are 74 per cent. of carbon, 10·69 of hydrogen, and 15·31 of oxygen. Exposed to a cold a little below 32°, it becomes thick and turbid; at 0° it congeals into a transparent yellow mass; by exposure to the air it thickens and forms a thick tenacious coating, and hence is called a *drying oil*; it is decomposed by a heat above 600°. Castor oil is soluble in ether and in cold alcohol; the latter property is not possessed by any other fixed oil with which we are acquainted except croton oil. East Indian castor oil is the kind principally employed at present in the British isles. West Indian castor oil is not unfrequently met with; but American castor oil is but little esteemed by the druggists (although usually efficacious as a medicine) on account of its disagreeable flavour, in consequence of its becoming solid in cool weather, and throwing down a copious deposit of white fatty crystals.

Adulterations.—The adulteration of castor oil with other fixed oils, a fraud more frequently practised in former days than at present, may be readily detected by its solubility in alcohol, pure castor oil being entirely dissolved by its own volume of alcohol. It should be also free from any rancid odour or acrid taste.

Ph. D.—Castor oil is a mild but effectual cathartic, operating soon after it has been taken, without pain or uneasiness, producing three or four thin, feculent, not watery evacuations: these properties adapt it for all cases in which we desire to evacuate the contents of the intestinal canal without producing abdominal irritation or general disturbance of the system. The only objection to its employment is its disagreeable greasy taste, in consequence of which it frequently occasions nausea and vomiting. The following are a few of the cases in which its use as a cathartic is particularly indicated: inflammatory or spasmodic diseases of the intestinal canal or of the uro-genital apparatus; hæmorrhoidal affections; stricture of the rectum; during pregnancy and after delivery; in diseases of infancy and childhood; after surgical operations about the penis or scrotum, &c. If castor oil be at all rancid, it becomes very unmanageable, causing much irritation, and sometimes even troublesome diarrhœa.

U. S. & M. of Ass.—Dose, ℥ij, by the mouth or in the form of enema. It is best taken floating on the surface of water to which some aromatic tincture, as of cinnamon or of orange peel, has been added; or it may be made into an emulsion with yolk of egg or with gum.—*Castor oil pergamot emulsion*, P. (Castor oil, ℥ij; yolk of egg, 1; orange-flower water, ℥ss.; water, ℥iij.; mix.)

Substitutes for the Same.

Substitutes for the Same.—D. L. E. *The Common Castor.*—Under favourable circumstances in the three preceding species the leaves and inner bark of the stem are also officinal in the Dub. Pharm. It is a small, herbaceous plant, belonging to the natural family *Euphorbiaceæ*, and to the Linnæan class and order *Monœcia Decandria*. The inner

readily detected: the former, by the effervescence produced when muriatic acid is dropped on a small fragment; the latter, by a violet and ethereal decoction of the powder being rendered blue by tincture of iodine.

Ta. P.—Scammony, when pure, is a powerful cathartic, operating as a direct irritant to the intestinal mucous membrane, and producing copious watery evacuations. It is well adapted for cases of habitual constipation arising from a torpid state of the intestinal canal or passive dropsies, as apoplectic affections, and as an active purgative for children, for whom it is beneficially combined with calomel. Where there is any tendency to inflammation of the digestive organs, scammony is contra-indicated as a cathartic. From the difficulty of procuring the drug in a pure state, scammony has of late years fallen into much disrepute.

D. & M. or Aam.—In powder, if the scammony be pure, for an adult, gr. xij to gr. xxj, but, as usually met with, double that quantity should be prescribed in combination with some bland powder, or made into an emulsion with milk.—*Pulvis Scammonii compositus, D. L.* (Scammony, best extract of jalap, of each, ʒij; ginger, ʒss; rub separately to very fine powder, and mix.) Dose, for an adult, gr. x to gr. xx; for a child, gr. ij to gr. v.—*Pulvis Scammonii cum Hydrargyro, H.* (Scammony, ʒij; calomel and white sugar, of each, ʒss; mix.) Dose, same as last preparation. An excellent purgative for children.—*Extractum, sive Resina, Scammonii, L.* (Take any convenient quantity of scammony in fine powder, boil it in successive portions of proof spirit till the spirit ceases to dissolve anything more, distil the liquid till little but water passes over, then pour away the watery solution from the resin at the bottom, agitate the resin with successive portions of boiling water till it is well washed, and, lastly, dry it at a temperature not above 200°.) Dose, gr. ij to gr. x; best administered according to the following formula:—*Mistura Scammonii, L.* (Resin of scammony, gr. xij; sweetened milk, ʒiij; triturate the resin with a little of the milk, and gradually with the rest of it till a uniform emulsion is obtained.) Intended for one dose for an adult, but much too powerful; I have always found gr. v, triturated with the same quantity of milk, sufficient for the most alarming bowels. The mixture cannot be distinguished either by smell or taste from rich new milk, and, consequently, forms a very convenient purgative for children, in doses of five to ten.—*Elaterium* (*Obstetric, L.*) *Scammonii, D. L.* (Scammony, powdered, ʒiss; cloves, bruised, ginger, powdered, of each, ʒvj; oil of caraway, ℥ss; syrup of roses, ʒj; "pour the syrup on the powders; then, having added the oil of caraway, mix all thoroughly." D. "Rub the dry ingredients together to very fine powder, and preserve them. When a mixture is to be used, the syrup being gradually poured on, rub again; lastly, the oil of caraway being added, mix well." L.) A stimulating cathartic, but seldom used. Dose for an adult, ten to 15; for children, gr. v to gr. xij.—*Syrupus Scammonii, P.* (Scammony, ʒvss; sugar and syrup of violets, of

[illegible] [illegible] [illegible] [

less drying; both senna and cassia are similar to, but a little weaker than, Mogadore senna.

C. Pudding is MM. Lassaigne and Feneulle, Alexandrian senna is composed of *cathartin*, chlorophylle, yellow colouring matter, extract, gluten, resin soft and white salts. Cathartin supposed to be the purgative principle, is an uncrystallizable, transparent substance, with a peculiar odour, and a bitter nauseous taste. Senna leaves yield their active properties to both cold and warm water, to ether, to proof spirit, and to alcohol; warm water extracts about a third of the weight of the leaves.

Adulterations.—In Egyptian senna, as met with in British commerce, the only adulteration is that before indicated, namely, with *Argel*, and sometimes with *Tephrosia* leaflets. The former are readily distinguished by their paler yellowish colour, their coarser texture, their under surface being reticulated with veins, their upper surface somewhat rugose, and by their being equal sided; the leaflets of all the true senna being unequal at the base. Tephrosia leaflets are easily known by their silky surface, and by the lateral veins proceeding parallel to each other to the very edge of the leaf without reuniting. Two other adulterations are common on the Continent, but have never been met with as yet as far west as the British market; one is with the leaflets of the *Colutea arborescens*, or bladder senna, which can be at once distinguished by their regularity at the base; the other, a more serious fraud, in consequence of the poisonous property of the substance employed, is with the leaflets of the *Cassia Marilandica*, they are known by presenting three very prominent longitudinal nerves, and chemically by their infusion producing, with solution of sulphate of iron, a blackish precipitate (*tannate of iron*), and with gelatin a heavy whitish precipitate (*tannate of gelatin*).

Tr. F.—Senna is an active cathartic, holding a middle place between the milder and more active medicines of this class; operating efficaciously, yet safely, though often producing nausea, griping, and flatulence; its action is somewhat stimulating, increasing the secretions and exciting the peristaltic action chiefly, but not those of the small intestines. It is adapted to all cases requiring the cathartic purgative; but it should be combined with the active saline cathartics, for which the infusion is a good vehicle, if it is necessary to diminish arterial action, or to produce general antiphlogistic effects. The only circumstance contra-indicating its employment is an inflammatory condition of the mucous membrane of the alimentary canal. The cathartic principle of senna is absorbed before its operation is produced, as is proved by its action on the secretions when the infusion is injected into the veins, and also by its imparting a purgative property to the milk of nurses.

Dr. A. M. on Aloe.—Senna is not administered in the form of powder; it is, indeed, in spite of boiling water for half an hour, and the observations several times repeated, will be sufficient for a dose; its taste is only concealed by the addition of some kind of spice, and is easy to be covered with sugar, and milk added; in this way it is

[illegible] powder, ℥vj; rosemary, bruised, and marjoram seeds, bruised, of each, ℥ss; resins, bruised, and senna, of each, ℥vj; proof spirit, Oij; digest for seven days, strain, express, and filter; may be more conveniently and expeditiously made by percolation, as directed for compound tincture of cardamoms. (If Alexandrian senna be used, it must be freed from cynanchum leaves by picking.) A stimulating and cordial cathartic, in doses of ℥ss to ℥j, only fit for adult hypochondriacal habits; most generally prescribed as an adjunct to infusion of senna, or other cathartic infusion, in doses of ℥ss or ℥j, to correct their griping qualities.

SODÆ PHOSPHAS, D. L. E. *Phosphate of Soda.*

P. V.—Transparent, colourless crystals, the form of which is the oblique rhombic prism; anodyne, with a cooling, saline, not disagreeable taste. Sp. gr., 1·369.

C. V.—It is composed of 2 eq. of soda, 1 of phosphoric acid, 1 of basic water, and 24 of water of crystallization ($HNaO, PO^5 + 24HO$); it effloresces and becomes opaque by exposure to the air; moderately heated, it fuses in its water of crystallization, which, if the heat be increased, is driven off. Phosphate of soda dissolves in four times its weight of cold water, and in twice its weight of boiling water; the solution has a feebly alkaline reaction; it is nearly insoluble in alcohol.

Pur.—Phosphate of soda is an article of the Materia Medica in the London Pharmacopœia, the processes of the Dublin and Edinburgh Colleges are as follows: A pint of lime water, in powder, ℥iv parts (Ox., ℥ij; sulphuric acid, dilute, ℥iij (Ox., ℥ij) and the product in an earthen vessel with uric acid, and add gradually [ammoniæ pure (Ox., ℥ij or water, agitate; digest for 3 days, stirring often; pour the supernatant part and [illegible] dry (and agitate occasionally, E.); filter and add to [illegible] (Ox., ℥ij) of boiling water, and wash through [illegible] with water, so as to remove all the acid; let the supernatant solution, and evaporate the whole down to one half (to Ox., ℥ij, Ed.); set the remaining clear solution aside, and the crystals [illegible] set apart to dry in a moderate heat, E.); then add eight parts (sufficient to saturate the acid, E.) of carbonate of soda, previously dissolved in [illegible] water, and, by alternate evaporation and cooling, obtain crystals, which are to be kept in a close vessel (which, if required, may be purified by [illegible] solution, Ed. More crystals will be obtained by successively evaporating, adding a little water, and [illegible] till the liquid exerts a feebly alkaline reaction on [illegible] paper, and then allowing it to cool, L.)

Adulterations.—The salt is in general tolerably pure; if the precipitate produced in a solution by muriate of baryta be not entirely dissolved by nitric acid, a sulphate is present; and if that formed by nitrate of silver be not dissolved by nitric acid, a muriate is present.

Uses.—A mild saline cathartic, resembling in its operation the sulphates of magnesia and soda, to both of which it should be preferred for children and delicate persons, in consequence of the mild nature of its taste.

D. & M. as Ant.—Gr. xx to ℥ij; it may be given dissolved in water or in any of the cathartic vegetable infusions; or it is readily taken by children dissolved in broth or soup, in which it only serves as a saline basis.

Incomp.—The mineral acids, lime-water, magnesia, oxide of bismuth, baryta, silver, and the acetates of lead.

Name of Process, various. *D. E.*—*Sal e Fonte*—*Sal de Tartaro*—*Tartrate of Soda and Potash*—*Rochelle salt.*

P. P.—This salt occurs in large, transparent crystals, which are right rhombic prisms, generally produced at both extremities, with a saline, somewhat bitter taste. Sp. gr. 1·757.

U. P.—It is composed of 2 eq. of soda, 1 of potassa, 2 of tartaric acid, and 10 of water ($KO, Na\,O, C_4H_4O_5 + 10\,HO$). An ounce dissolves in 4 ounces avoirdupois of water at 60°; exposed to a moderate heat, it loses all its water of crystallization; by a strong heat it is decomposed, and converted into a mixture of charcoal and the carbonates of soda and potash. It dissolves in five parts of cold, and two of boiling water.

Tests.—*Dr. L. E.*—Carbonate of soda, five parts (10); [illegible] (1·6); [illegible] (1·1); in the carbonate of soda dissolved in the water, and by decrease in the specific gravity of the solution, which will be 1·1, and will be made, that is, a soda solution may be formed (Compare the latter agent, that it was good crystals. *L. E.*)

As the salt is generally sold in crystals, it is not liable to adulteration.

Use.—A mild, cooling laxative, one of active as most of the other saline cathartics, from which also its taste is less disagreeable; it is seldom prescribed alone, but is an very general use as the active ingredient in the commonly-called Seidlitz (*Seignette's*) powders.

D. & M. ad Ann.—3ij to 3vj, or 3i dissolved in a large quantity of water. *Seidlitz powders* consist of 3ij of tartrate of soda and potash, and 9ij of bicarbonate of soda, reduced to powder and mixed, contained in a blue paper, and 3ss of powdered tartaric acid in a white paper; they are taken dissolved in two half a pint or a pint of water, while the liquid is in a state of effervescence. They form an agreeable and mild aperient.

Incomp.—Most acids; lime-water; the salts of lime; and the acetates of lead.

Name of Process, *D. L. E.*—*Sulphate of Soda*—*Glauber's salt.*

P. P.—A solid, white salt, crystallized either in small, oblique crystals, or in long prisms of which the sides are often unequal and oblique; with a cooling, saline, very bitter taste. Sp. gr. 1·4?

U. P.—It is composed of 1 eq. of soda, 1 of acid, and 10 of water ($Na\,O, SO_3 + 10\,HO$). By exposure to the air it effloresces rapidly, loses all its water of crystallization, and a white powder is left. Heated, it fuses, and at the temperature of 400° it becomes a white solid, which liquefies at a red heat, but is not decomposed. Sulphate of soda is soluble in three parts of water at 60°, and in its proportion of boiling water. It is insoluble in alcohol.

Tests.—*Ibid.*—Dissolve the salt, which remains after the ignition, in water, and to a solution of sodium acetate add some ammonia and [illegible] then, to a portion of the solution, add [illegible] and [illegible] of the salt which remains after the ignition, a precipitate will be formed [illegible] of soda is contained, which will be the proper [illegible] of sulphate of soda in solution, and [illegible]

solid, or dissolve some in cold water and let it stand; pour off the liquor and dry the crystals.” Aikin. “Upon all the salts already mentioned which possess pure alkalinity and, in a higher degree, upon the salts of ammonia, a sufficient quantity of muriatic acid will, on the instant, cause the escape of the carbonic acid; and the alkalis, and alkaline earths, when in a state under the operation neither with boiling water, nor in the open air, by the acquired weight, a proportion of carbonic acid is found, and also by the liquid and pale crystallize.”

Not subject to adulteration.

Tar. E.—As native saline cathartics, increasing remarkably the intestinal secretions; in its mode of operation it resembles sulphate of magnesia, and may be used in the same cases; in consequence, however, of its more disagreeable taste, and its tendency, in some habits, to produce griping, it is not so frequently employed as that salt.

U. & M. or Adm.—1 oz. to 2 oz. dissolved in as many ounces of water; ten or twelve drops of dilute sulphuric acid added to the solution conceal much its disagreeable taste. The effervescent salt is about twice as active as the crystals.

Incomp.—Carbonate and bicarbonate of potash; the salts of lime and of baryta; the acetate and the nitrate of lead; muriate of protoxide and nitrate of silver, if the solution be strong.

Sulphur sublimatum, U. S. Sulphur, E. *Sublimed Sulphur, Sulphur or Brimstone.*—An elementary substance, found in large quantities in an impure state, in the neighbourhood of volcanoes; it is also found combined with metals in many parts of the earth; and with hydrogen in many mineral waters. Crude sulphur is imported into Britain from Italy and Sicily.

P. P.—Two kinds of sulphur are commonly met with: roll sulphur, or brimstone; and flowers of sulphur, or sublimed sulphur. *Roll sulphur* is in cylindrical pieces from two to three inches long, and nearly an inch in diameter, obscurely crystallized in the mass, crackling when held in the warm hand, very friable, and breaking with a shining crystalline fracture. *Sublimed sulphur* is in the form of a fine powder, which, when examined by the microscope, is seen to be composed of crystalline grains: both kinds are of a bright, yellowish green colour, with an almost imperceptible taste, and a faint, peculiar odour when rubbed. Sp. gr. 1·98. Atomic weight 16·116.

C. P.—Sulphur is a simple substance, insoluble in water and in alcohol. It fuses at 226°, and between that temperature and 284° it forms a clear liquid of an amber colour at 320° of the scale, assumes a reddish tint, and if the heat be continued, becomes a thick, viscous mass; from 482° to its boiling point, 600°, it becomes again more fluid, and finally rises in vapour before it comes into boiling fluid. Sulphur, if ignited, burns with a luminous blue flame, and is converted into sulphurous acid gas.

From sublimed sulphur is an article of the Materia Medica in the Dublin and Edinburgh Pharmacopœias; in the subsequent it is prepared by subjecting sulphur in a proper vessel, exposed to the action of heat sufficient to melt it, and then, after having removed the vessel from the fire, causing the sulphur to flow out and cool, and lastly breaking the vessel with a gentle blow.”

[illegible]—Persons of delicate [illegible] [illegible] [illegible]

produce a coating of that metal. Sulphuric acid is readily detected by a strong acid solution giving a white precipitate, insoluble in acetic acid, with solution of muriate or nitrate of baryta.

Th. E.—Tamarind pulp is refrigerant and mildly laxative, but, although adapted for mild febrile or inflammatory affections occurring in children, it is seldom employed alone. Its combinations with senna have been before mentioned.

D. & M. or Aqua.—ʒss to ʒss.—Tamarind whey is prepared by boiling ʒj of tamarinds with Oj of new milk, and straining; it is an excellent cooling, gently laxative drink in febrile diseases.

Incomp.—The salts of potash; alkaline carbonates; lime-water; tartar emetic, and the acetates of lead.

Terebinthinæ oleum.—*Oil of turpentine* (described in the division Antehelmintics), given in large doses, acts as an active cathartic; when administered alone, however, its action is uncertain, and, consequently, it is usually prescribed in combination with castor oil: in this form it proves a most effectual purgative in obstinate constipation, especially when dependent on affections of the brain; in spasmodic diseases, as in chorea, hysteria, epilepsy, and tetanus; in sciatica and other neuralgic affections; in passive hæmorrhagies; and in purpura hæmorrhagica; over the latter disease, independent of its cathartic action, it appears to possess some specific effect, when administered in large doses. The dose of oil of turpentine as a cathartic, is from ʒij to ʒiij, either given by the mouth, or in the form of enema. (See *Anthelmintics*.)

Violæ, D. E. *Flowers of Viola odorata.*—An indigenous plant, belonging to the natural family *Violaceæ*, and to the Linnæan class and order *Pentandria Monogynia*.

[illegible]

P. P.—"Violet flowers are so remarkable for their odour and colour, that they have given a name to both" (*Duncan*).

C. P.—They are composed of odorous principle, blue colouring matter, sugar, gum, albumen, and some salts. Violets yield their active principles to water, but not to alcohol. The infusion is a delicate test for both acids and alkalies, and, as such, is much employed by the chemist.

T. E.—Violet flowers possess mild laxative properties, and in the form of syrup are sometimes administered to new-born infants, and to young children.

D. & M. or Aqua.—*Syrupus Violæ*, D. (Fresh petals of the violet ʒvj, boiling water, *by measure*, ʒxx; macerate for 24 hours, then press strongly and filter, without expression, and add sugar, so as to make a syrup.)—E. (Fresh violets ℔j; boiling water Oiss; sugar ℔ij, or more; infuse the flowers for 24 hours in a covered

[illegible]

CHAPTER VI.

CAUSTICS.

[illegible]

Caustics are substances which, applied to the human body, corrode and destroy the parts with which they come in contact. Their action is chemical, as they destroy the life of the parts either by combining with the animal matter so as to form a new compound with it, or by causing the elements of the animal tissues to enter into new combinations, by which their cohesion is destroyed and their composition changed. The effects produced by caustics are more or less rapid, according to the energy of the substance that is used; if it be very powerful, the change of structure induced is so immediate, that surrounding inflammation is not excited only after the death of the part; but, on the contrary, appears as the direct consequence of the loss undergone by the tissues. The action of this class of remedies is generally local, but some of them (as arsenious acid) may become absorbed, and thus produce constitutional symptoms. The various purposes for which caustics are employed will be considered under the individual remedies in this class.

ACIDUM ACETICUM, D. L. E. *Acetic acid.*

P. P.—A limpid, colourless liquid, with a very pungent, pungent smell, and a caustic, highly acrid taste. The acetic acid differs in the three British Pharmacopœias: that of Edinburgh, which is the strongest, is 1·060 to 1·070, but not above 1·080; that of London, 1·049; and that of Dublin, 1·074.

C. P.—*Acetic acid* (*Acidum*), *Glacial acetic acid*, consists of one eq. of anhydrous acetic acid ($C_4H_3O_3$), and one of water; it solidifies at 60°, and is vaporizable at 360°; when of the density 1·063, one hundred minims (97 grains) neutralize nearly 212 grains of crystallized carbonate of soda. *Acetic acid* (*Dilute*) consists of one eq. of anhydrous acetic acid and three of water; one hundred minims neutralize nearly 194 grains of carbonate of soda. *Acetic acid* (*Fortis*) consists of one eq. of anhydrous acid and nine of water; 100 grains neutralize 87 grains of crystallized carbonate of soda. Acetic acid reddens litmus paper, and on exposure to the atmosphere it combines with water of the atmosphere, and forms crystallizable acetic acid; it dissolves the vegetable alkalies and the active principles of many of the vegetable substances which possess any valuable properties in medicine.

Adulterations.—It should be of the prescribed density; if lighter, it probably does not contain sufficient of the anhydrous acid, but as before remarked with respect to vinegar, this test cannot be depended on; the strength can be more accurately ascertained by its neutralizing power over carbonate of soda. It is sometimes adulterated with sulphuric or muriatic acid; the former may be detected by the production of a white precipitate insoluble in nitric acid, on the addition of a solution of muriate or nitrate of baryta; the latter, by a similar precipitate being produced on the addition of a solution of nitrate of silver. The occasional impregnation with lead or copper is readily detected by sulphuretted hydrogen, causing a black precipitate.

Dr. Ure.—Acetic acid undiluted has been used, it is stated, with much success, as a local application in the advanced stages of porrigo lupinosa, or eczema of the scalp: a piece of lint rolled round a stick is moistened with the acid and applied to the diseased surface for a few seconds; the pain caused is very acute, but temporary; one or two applications are said to be usually sufficient to effect a cure. It is also employed as a caustic to destroy warts and sweats, the latter especially, when of a syphilitic origin.

Acidum muriaticum, D. E. [and U. S. P.] Acidum hydrochloricum, L. *Muriatic acid; Hydrochloric acid.*

U. S. P.—A limpid, colourless liquid, with a yellowish tinge when not quite pure, having a suffocating odour, and an intensely acid, disagreeable taste.—The specific gravity of the liquid acid of the Dublin and London Pharmacopœias is 1·160; that of Edinburgh, 1·170.

U. S. P.—It is a solution of muriatic acid gas (HCl) in water; the Dublin and London preparation contains about 32 per cent. of acid, the Edinburgh about 34 per cent. Exposed to the air, muriatic acid gas rapidly absorbs moisture, which becomes white and visible

or nitrous oxyd, or of nitric acid, which is immediately more deep orange.

Any slight adulterations which are met with in nitric acid are unimportant with reference to its medicinal use.

Uses. As a caustic, strong nitric acid is employed to destroy corns and warts, as an application to parts bitten by rabid animals, to promote wounds, and to phagedenic ulcers; more recently its application to certain forms of hemorrhoids has been very favourably employed by Dr. Houston, of Dublin. (*See Dublin Journal of Medical Science*, vol. xxiii., p. 102.) In its application for any of the above purposes, the neighbouring parts should be covered with olive oil or some resinous ointment, so as to confine the action of the acid.

In cases of poisoning with this acid, the antidotes are the same as for muriatic acid.

Nitric oxymuriate. *Sulphuric acid* (described in the division Escharotics) also possesses powerfully caustic properties, destroying the animal tissues wherever it is brought in contact with them. It is used as a caustic to the integument of the eyelid in *entropium*, or inversion of the lid; and to the conjunctiva reflected on the eyelid in *ectropium*, or eversion of the lid. It is also employed to destroy warts, and as an application to poisoned wounds.

LIQUOR ARSENICALIS, E. ARSENICAL SOLUTION, L. *Liquor arsenicalis; solution of arsenic; Strong arsenical.*—This preparation resembles in its physical properties that already described in the division Antacids; in its chemical properties, it only differs in containing more arsenic, its density being 990°. In the London Pharmacopœia, it is an article of the Materia Medica; in the Edinburgh, the same process is followed for both solutions; it is not mentioned in the Dublin Pharmacopœia, but is commonly kept in the shops. It has been only used as a caustic in the form of pulled plaster, as a local application.

LIQUOR ANTIMONII CHLORIDI, E. ANTIMONII CHLORIDUM SOLUTUM, L. *Liquor antimonii chloridi; Butter of Antimony; Butter of Antimony.*—The muriate of antimony is a deliquescent white salt, but, as it is not employed in medicine, the following description refers to the article commonly met with in the shops under that name.

A brown, transparent liquid, of a deep reddish-yellow colour,

having the odour of muriatic acid, and a strongly acid taste. Sp. gr., 1·2 to 1·5.

C. P.—It is composed of muriate of antimony, free muriatic acid, a little nitrate acid, muriate of iron, and water. If some of these in the air, left exposed, it evaporates spontaneously, and as a residuum a white, semi-crystalline mass is left, which throws down a yellowish-white powder, formerly called *Powder of Algaroth* (oxychloride of antimony). Solution of muriate of antimony may have a powerfully acid reaction.

Uses.—Either by dissolving superchloride of antimony (Chloride of antimony and sulphuric acid with the aid of a little nitric acid

Th. U.—It is employed as a caustic to parts [illegible] by reason of its liquidity enabling it to penetrate into all parts of the wound; the parts should be first dried as well as possible, and pieces of lint, as all liquids immediately decompose this preparation. Pure muriate of antimony has been used as an application to staphyloma by some German surgeons; a camel's hair pencil or a point of lint is dipped in the deliquescent salt and applied to the tumour, until a whitish crust is perceived, when the salt is washed away by means of a large pencil dipped first into water and afterward into milk and water.

In cases of poisoning with this solution, the same treatment is to be employed as in poisoning with muriatic acid.

ARGENTI NITRAS, L. U. ARGENTI NITRAS FUSUS, D. LAPIS INFERNALIS, D. *Nitrate of Silver; Lunar Caustic.*

P. P.—A solid salt in the form of rods or pencils, crystallized on the surface, of the thickness of a [illegible] pen. They have a crystalline fracture, and are of a greyish-white colour, odourless, with a bitter, caustic, and metallic taste.

C. P.—Nitrate of silver is composed of one eq. of nitric acid and one of oxyde of silver ($Ag\,O, NO^5$). It is not decomposed by [illegible] soluble in its own weight of water at 60°, and in forty parts of cold rectified spirit: heated, it fuses, and by a red heat is decomposed, and metallic silver is obtained. Exposed to light in solution with the smallest trace of organic matter, it becomes brown or black, and stains the cuticle black. The best test for nitrate of silver or solid lunar caustic is the addition of any of the soluble muriates (for common salt); a white curdy precipitate is formed, which becomes violet by exposure to strong light, and is soluble in ammonia, but not in either cold or boiling nitric acid.

Uses.—Nitrate of silver (dissolved [illegible] parts of water, D.), in [illegible] gonia and phthisis, D.; as paste (D. L. U.) [illegible] the silver in the diluted acid, in a glass vessel, with the aid of a gentle heat, and evaporate to dryness; digest this in a crucible with as much [illegible] as will [illegible] L.; reserve in glass vessels." The [illegible] employed in the same cases as the nitrate, but are preferred by surgeons and patients.

Adulterations.—Nitrate of silver, as [illegible] frequently adulterated with nitrates of [illegible]

per, and with black oxyde of manganese. The latter is detected by dissolving the salt in water, when it is left in the form of a black powder; the nitrates of lead, zinc, and copper are detected by precipitating a solution of the salt with excess of muriate of soda; the precipitate is immediately soluble in ammonia if lead be present, and the liquid part gives with sulphuretted hydrogen a white precipitate if any zinc was present, but a black one if the impurity was copper. Nitre is detected by precipitating the silver with muriatic acid, filtering and evaporating, when, if any be present, it will be obtained in the crystalline state.

Uses.—As a caustic, nitrate of silver possesses many advantages over the other remedies of this class, and, consequently, is much more frequently employed; applied to the skin or to the mucous membranes, it produces first a whitish stain, rapidly becoming grayish, and, if exposed to light, finally black; and, at the same time, the part to which it is applied is deprived of vitality. Its chief value as a caustic depends on its great manageableness in consequence of its solid form, on its property of not deliquescing, and on its mild, but effectual action, the pain produced by it although sometimes acute, being but of short duration; its uses are very numerous. It is applied to destroy warts, corns, and many small tumours; to check hæmorrhage occurring from small vessels, as in the bleeding from leech-bites in children; to repress exuberant granulations, applied to the sound skin above the inflamed part, to stop the spread of erysipelas and erythema, to effect which it must be applied freely, so as to destroy the vesiculation as well as the cuticle. In the first stage of chancre, when the ulcer is very minute, nitrate of silver applied freely generally checks the disease, and prevents it from spreading farther; indeed, in all sores about the prepuce or glans, whether of syphilitic origin or not, its application is for the most part beneficial. In large indolent ulcers, applied over the whole surface, it acts with excellent effect; in ulcerous sore throat, as soon as the eschar which it produces peels off, the sore is found to be healed. As a topical application, in the solid state or in the form of a strong solution, it is most valuable in ulcerations of the cornea, in purulent and in gonorrhœal ophthalmia; a weaker solution (gr. j. to gr. x. to ℥j. of water) may be employed in both acute and chronic conjunctivitis; it is however liable to produce specks on the cornea or dark stains on the conjunctiva, as first observed by Professor Jacob, of Dublin. Nitrate of silver has also been used in the solid state to remove strictures of the urethra and œsophagus, applied by means of a bougie, into the point of which it is inserted (*armed or caustic bougie*); but the practice is dangerous. In gonorrhœa occurring in females, a pencil of nitrate of silver is applied freely to the mucous membrane of the vagina, it is said with much benefit; and in the same disease in males, an injection, varying in strength from gr. j. to gr. xx. dissolved in ℥j. of water, is thrown into the urethra; such injections, however, are not unattended with danger. Nitrate of silver is also employed with benefit, as a topical application, in many forms of inflammation of the

Th. E.—Arsenious acid is a powerful caustic, producing death of the part to which it is applied, which subsequently separates by sloughing; its consequences, however, of the danger which may arise from its absorption, it is but seldom employed at present. The cases in which it has been found of use are, cutaneous or cancerous ulcerations, especially of the skin of the face or lips, in senile gangrene, and in hospital gangrene. It may be applied in the form of ointment made with axunge or spermaceti, powdered alum being added to allay the pain it causes. It is stated that dangerous symptoms are less likely to arise in consequence of its absorption, if an ointment containing a tenth or a sixth of its weight of the acid be employed, than if a weaker proportion be used.

Cupri subacetas, D. [and U. S. P.] *Syns.* L. M. *Subacetate of Copper; Verdigris; Impure diacetate of Copper.*

P. V.—In coarse masses or in powder, of a beautiful bluish-green colour, with a disagreeable acetous odour, and a styptic, metallic taste.

C. P.—It is a mixture of the semi and tribasic acetates of copper, sometimes also containing a proportion of the bibasic acetate. It is prepared in the dry; boiled in first brew, then acetic acid, and the residue contains metallic copper; water resolves it into a soluble acetate, and an insoluble trisacetate. It is dissolved entirely by both sulphuric and muriatic acids.

Dose.—As a tonic in form of pill, combined by gluing gums of copper as ordered with the following gums of the gluing, or with double Cupri in syrup. The Dublin College directs the article to be prepared for medicinal use (Cupri subacetas purificatus) by a process similar to that of prepared chalk.

Adulterations.—The slight impurities, metallic copper or earthy matters, present in commercial verdigris, are of no importance; they may be detected by its solubility in sulphuric or muriatic acid.

Th. E.—As a tonic, it is applied to indolent ulcers, to venereal warts, and to fungous growths; it is also a useful application in ophthalmia tarsi, and in chronic diseases of the scalp, when they are of an indolent and obstinate character. It may be used in powder, or in either of the following forms: *Unguentum cupri subacetatis*, D. *Unguentum aeruginis*, E. (Subacetate of copper, in fine powder (prepared, D.), ʒss. (℈ii. E.); ointment of white resin, ℔ʒvi. (℥vi., E.); olive oil, ℥ss. D.); melt the ointment, and add the verdigris, "previously mixed with the oil," D.)—*Linimentum aeruginis*, L. *Unguent cupri subacetatis*, D. (Verdigris in powder, ʒss.; vinegar, ℥viij.; honey (despumated), ʒxvi.; dissolve the verdigris in the vinegar, strain through a linen cloth; add the honey, and boil to a proper consistence.) A mild caustic, used for ulcers of the mouth and tonsils.

In cases of poisoning with verdigris, the best antidote is albumen.

Cupri sulphas. *Sulphate of Copper.*—This preparation, obtained by precipitating a solution of sulphate of copper with carbonate of sodium, is not contained in any of the British pharmacopœias.

et hydrargyri B. (Red oxyde of mercury, 1 ounce; water, 1 pint.) (Dissolve them into a uniform lotion.)

POTASSÆ CARBONAS, D. POTASSÆ SUBCARBONAS, L. POTASSA, E. *Carbonate of Potash; Hydrate of Potash; Potash.*

P. P.—In flat, irregular pieces, or, more generally, in pencils or sticks of various lengths, and about the thickness of a writing pen; greyish or bluish; inodorous, having a very acrid, alkaline taste. Sp. gr., 1·8.

C. P.—It is composed of 1 eq. of potassium, 1 of oxygen, and 1 of water ($KO+HO$), exposed to the air, it deliquesces rapidly, soon becoming liquid, and attracting carbonic acid; at the same time it is converted into the carbonate. It is soluble both in water and alcohol, water dissolving nearly an equal weight of it; during its solution heat is evolved. It possesses in an eminent degree the properties of an alkali.

Preparation.—"Evaporate any quantity of solution of potash in a clean brass or iron vessel, until the heat being increased, an oily looking mass is left; a drop of which when dropped on a plate red, becomes fluid without boiling. Pour the liquid on an oiled plate, and as soon as it solidifies, cut it into pieces from the lower part possible, $\frac{1}{2}$ an inch preserve in well-closed bottles."

Adulterations.—It generally contains various impurities, such as oxyde of iron, silica, and sulphates and carbonates of potash; their presence, however, are of little consequence in reference to its medical uses. The iron and silica may be detected by dissolving in water or in alcohol; the sulphates and carbonates by the appropriate tests for sulphuric and carbonic acids.

Ts. E.—Caustic potash is a powerful caustic, but so unmanageable, in consequence of its deliquescent property, that it is not often employed. Its chief use is for making an issue, which is effected by covering the part with two or three layers of adhesive plaster, in the centre of which an aperture is cut of the size of the intended issue; the caustic potash is rubbed on the part until the surface is destroyed; a linseed meal poultice is then applied, and when the slough separates a pea is inserted. For producing issues, however, the following preparation is preferred by many, as being more manageable, in consequence of its not being so deliquescent: *Potassæ cum calce*, D. E. (Evaporate any convenient quantity of Aqua Potassæ in a china, covered, iron vessel, to one fourth (one third, E.) its volume; and add slacked lime, till the fluid has the consistence of a firm pulp; preserve in well-closed vessels.)—L. (Half-ounces of potash and lime, of each, gj.; rub together and keep in a well-stopped vessel.) The preparation of the London College is made into a paste with rectified spirit before it is used.

In cases of poisoning with caustic potash, the best antidotes are vinegar, lemon-juice, or the fixed oils.

ZINCI CHLORIDUM. *Chloride of Zinc; Butter of Zinc.*

P. P.—In solid pieces, snow-white; inodorous, having a strongly caustic, metallic taste.

C. P.—It is composed of 1 eq. of chlorine, and 1 of metallic zinc

skin, and, at the same time, increase the general action of the vascular system. In addition to the medicines described in this division, other means are resorted to for the production of diaphoresis; the most important of these are increased muscular action, warm clothing, the warm vapour or air baths, the cold affusion, and the use of liquid, mucilaginous drinks, as simple water, gruel, whey, &c. During the administration of diaphoretics, it is essential that the surface of the body should be kept warm, and for this purpose a bad conductor of heat, such as flannel, should be employed; care must also be taken to avoid the application of cold, either by exposing the surface of the body to cold air, or by the use of cold drinks while the perspiration continues, or for some time after it has ceased. Lastly, should it be wished to check the diaphoresis, this must be done gradually, by drying the surface of the body with dry, warm towels, by diminishing the coverings, and by occasionally exposing the hands and arms to the air.

[This class of remedies, when successfully employed, not by promoting the watery exhalation from the *lungs* as well as the *skin*, the former being as perpetual a source of this exhalation as the latter. Pathologists, however, seldom appear to recognise the pulmonary transpiration when considering the cutaneous exhalation, though both are governed by the same laws and connected by common sympathies, being simultaneously augmented or diminished. And yet physiologists have demonstrated that more than a third part of the aggregate exhalation from the human body is thrown off by the pulmonary surface, the extent of which is incalculably greater. There are numerous diseases in which the only curative indication consists in restoring exhalation from these two organs, which is often suspended, as in diabetes, and other examples of the undue secretion of fluid from the other emunctories.]

Ammoniæ acetatis solutio, B. E. Ammoniæ acetatis liquor, L. *Solution of acetate of Ammonia; Mindererus's Spirit.*

P. P.—A transparent, colourless liquid, with a very faint odour, and a cooling, saline taste. The specific gravity varies with the strength of the solution: that of Dublin and Edinburgh is 1011; that of London somewhat higher.

C. P.—It consists of acetate of ammonia dissolved in water; the proportion of the acetate present varies exceedingly, depending on the strength of the distilled vinegar employed in the preparation. The solution should be perfectly neutral, but is usually faintly acid, which is an advantage in relation to its employment in medicine. By careful evaporation, crystals of the salt may be obtained; they are very deliquescent. By adding a few drops of sulphuric acid to the solution, an acetous odour is evolved; caustic potash disengages an ammoniacal odour.

[illegible]

...—Not liable to any that it has been properly ... shown by the tests of the Edinburgh Pharmacopœia. ... is muriatic acid, and as a boiling mixture of tartaric ... water, yields not heat."

... introduced into the Dublin Pharmacopœia ... preparation of better quality; but of late years it has ... as a cathartic in the same cases as James's powder, ... appears to resemble both in its action on the system and ... employed in the next article.

M. de Jussieu.—Dose, ½ to gr. v.; in some instances as large ... has proved useful; this, however, may be owing to ... preparation. It may be given in the form of pill made with ... of roses.

... PULVIS ANTIMONIALIS. L. POUDRE ANTIMONIALE. F. *Antimonial powder.*

F.—A dull white powder, tasteless and odourless; the powder ... gritty under the teeth, in consequence of its being ... rather coarsely powdered. The compound preparation "James's ... is a modification, for which this preparation was originally introduced into the pharmacopœias, resembles it both in ... and chemical properties, except in being in a state of much ... minute division.

C. P.—According to the recent and accurate experiments of Dr. ... Maclagan, of Edinburgh, the composition of both preparations appears to be similar, but the proportions of the different ... present vary remarkably in different specimens. They ... from ½ to 2½ per cent. of antimoniate of lime, and from 4 ... per cent. of sesquioxyde of antimony, in the powders of both ... chiefly the latter; the activity of the preparations is due ... powders being basic antimoniate acid and phosphate of lime. ... water dissolves the antimoniate of lime, which is deposited ... solutions cools; muriatic acid dissolves the sesquioxyde of ... and the phosphate of lime.

... The process for preparing James's powder is a secret with the proprietors of the medicine; that for antimonial powder is nearly similar to the above British Pharmacopœia process.—* Oxidizers of antimony, as peroxide, and perchloride, &c. (but not the other), when a white heat and yellow colour is heated to redness, and are reducible by various means to white, and the white oxides have become sub-salts; due to peroxide, and explain the fact known to a basic phosphate contained in antimoniate, as a chemical compound with another chemical change a perchloride becomes on a proper example, &c.; when cool, reduce to a ... powder.

... liable to adulteration; but, as before remarked, it varies ... in activity, the empirical preparation being more uniform in ... and, consequently, more generally preferred, notwithstanding its high price.

... antimonial powder and James's powder, though frequently, even in many large doses, not producing the least apparent ... on the system, more generally operate as powerful diaphoretics, ... a profuse perspiration, which occasionally ...

...employed in the early ... affections: they have ... manner with calo... ...essence of the ... ...in which the ... ...employ... ...with proper ... ...with much good...

...repeated ... with preserve... ...pill. (An... ...of ano... ...repeated every...

...PREPARATIONS.

...white, stri... ...crystalline ...ained, and ...

...of sulphu... ...moder... ...soluble in ...by muriatic ...gas.

...British Pharmacopœia; ...is assumed to ...ained by the ...phuretum ...

...is met with ... ...These are detect... ...ion of much im... ...is seldom want... ...by the reduction ...the ...being previously ...of soda.

Use. ...is at present not used in medicine; it was formerly ...ed as a diaphoretic, in doses of from gr. ... to ...; in ...ous diseases, and in gout and rheumatism. It is employed in pharmacy for preparing the other antimonial compounds.

ANTIMONII SULPHURETUM AUREUM, E. SULPHUR ANTIMONIATUM ... ANTIMONII OXYSULPHURETUM. *Golden sulphuret of Antimony. ...sulphuret of Antimony.* ...

...light powder of a bright orange colour, odourless and ...ste pure. ...

[illegible] is permanent in the air [illegible] sublimed; but if heated in contact [illegible] blue flame, evolving sulphurous [illegible] oxysulphuret. It is insoluble in water, and [illegible] dilute acids; with the aid of heat it is nearly [illegible] solutions of the alkalies.

[illegible] sulphuret of antimony, 1 part; water of caustic potash, [illegible] acid, 11 parts, or a sufficiency; add the sulphuret to the [illegible] for an hour; filter the warm liquor through doubled [illegible] dilute sulphuric acid; wash away the sulphate of potash with [illegible] golden sulphuret, and reduce to a fine powder." *Lond.*—"Take of [illegible] powdered, ʒvij.; solution of potash, Oiv.; distilled water, [illegible] acid, a sufficiency; the steps of the process are the same [illegible] of antimony, in fine powder, ʒj.; solution of potash, ʒxij.; water, [illegible] acid, a sufficiency; the same process is followed."

—This preparation often contains oxyde of iron and is frequently coloured with Brazil wood or red [illegible]; all these impurities are readily detected by the Edinburgh College: "twelve times its weight of pure [illegible] boiled by heat, dissolves most of it, forming a colourless and leaving a little sulphur."

The golden sulphuret of antimony possesses diaphoretic [illegible] large doses producing nausea and vomiting; it is [illegible] alone, but, in the following preparation, is in very [illegible] a diaphoretic and alterative: *Pilulæ Calomelanos* [illegible] (Calomel and golden sulphuret of antimony, of each, [illegible] resin, in fine powder, two parts; make into a [illegible] a sufficiency (two parts, E.) of treacle; "to be divided into 3-grain pills," E.)—*Pil. Hydrargyri Chloridi comp.*, [illegible] of mercury, oxysulphuret of antimony, of each, ʒij.; [illegible] powdered, ʒss.; treacle, ʒij.; rub the chloride of [illegible] the oxysulphuret of antimony, afterward with the [illegible] and the treacle, until incorporated.) This commonly known as *Plummer's Pill*; it is an excellent [illegible] alterative, well adapted for cutaneous eruptions, [illegible] of syphilitic origin. Dose, gr. v. to gr. x. or gr. xv

[illegible] POTASSÆ TARTRAS SIVE TARTARUM EMETICUM, D. [illegible] TARTRAS, L. ANTIMONIUM TARTARIZATUM, E. *Antimony and potash; Tartar emetic.*

[illegible] emetic is met with in the shops either in the form [illegible] powder, or in transparent, colourless crystals, which [illegible] with a rhombic base. It is inodorous, but has a [illegible] taste.

[illegible] composed of one eq. of tartrate of potash, one eq. of [illegible] oxyde, and two eq. of water ($KO, Sb O^3 (C^8H^4O^8) + 2HO$). [illegible] crystals effloresce in the air, soon becoming white [illegible] losing their water of crystallization. Strongly

[illegible] the salt is decomposed, and an ivory of antimony [illegible] is obtained. It is soluble in 12 ounces [illegible] in less than twice its weight of boiling [illegible] a solution. The solution gives white precipitates with sulphuric acid, caustic potash, and [illegible] with tincture of galls, and bright crimson with sulphuretted hydrogen or the soluble hydrosulphates, the latter of the characteristic kind.

[illegible] Pure. Take "Glass of antimony, in fine powder, 2 oz.; [illegible] (oil of vitriol), 2 fluidounces; water, 2 pints. Put the glass of antimony into a glass mortar, and add the sulphuric acid by degrees, rubbing the powder well with a glass pestle after each addition. Then add the water gradually, rubbing the powder well after each addition, and lastly boil the whole for a few minutes. Filter the liquor while it is hot, and wash the residuum on the filter with a little boiling water, adding the washings to the filtered liquor. Lastly, add to the liquor, while it is still hot, 2 pints of boiling water, and set it aside to cool and crystallize."

[illegible] Take of [illegible] of antimony, in fine powder, 2 oz.; [illegible] (oil of vitriol), 2 fluidounces; water, a pint.

Mix the acids together in a glass vessel, add by degrees the white oil, and triturate the mixture with a pestle of hard wood in a glass mortar, until the powder is thoroughly moistened. Then add the water gradually, rubbing the powder well after each addition, and lastly boil the whole for a few minutes. Filter the liquor while it is hot, and wash the residuum on the filter with a little boiling water, adding the washings to the filtered liquor. Lastly, add to the liquor, while it is still hot, 2 pints of boiling water, and set it aside to cool and crystallize.

Take of this powder, 2 oz.; [illegible] of potash, 12 oz.; [illegible] water, 12 fluidounces. Boil the powder in the water in a glass vessel, and add the solution of potash gradually, stirring well after each addition. Then boil for a few minutes, and filter the liquor while it is still hot. Wash the precipitate with boiling water, adding the washings to the filtered liquor. Lastly, add to the liquor, while it is still hot, as much water as will make the whole measure 1 pint, and set it aside to crystallize. By further evaporation the mother-water may be made to yield an additional quantity of crystals, which should be purified by a second crystallization.

Adulterations.—In the crystalline state this salt is seldom adulterated; in a few instances I have found crystals of sulphate of potash mixed with those of tartar emetic, and [illegible] by their greater hardness, and by their not effervescing with acids. In one case of domestic poisoning, in which a solution of tartar emetic had been dropped into a solution of sulphuretted hydrogen, a copious yellowish deposit formed on them. The powder is sometimes adulterated with cream of tartar, and, being badly [illegible], frequently contains a large quantity of the oxide of [illegible]. These impurities are readily detected by the tests of the following [illegible].

"Entirely soluble in 20 parts of water [illegible] less, and not affected by addition of [illegible] solution in 40 parts of water is not affected by [illegible] a solution of 8 parts of crystals of lead in 96 parts of water and 16 parts of nitric acid."

Tr. L.—In properly-regulated doses [illegible] diaphoretic, nauseant, antiseptic and emetic [illegible] the substance [illegible] diaphoretic action, but this is [illegible] the stomach [illegible] the system by its [illegible] which [illegible] [illegible] proceeds. In all the [illegible]

a determination of blood to the head before the use of the more stimulating expectorants, twice or thrice employed with great benefit. It has also been used with much advantage in obstinate or chronic rheumatism, accompanied by determination of blood to the head, or in cases of this kind, if much debility be present. The employment of the concentrated preparations generally is contra-indicated in the cases where gastric irritation is present. (*Dr. Pereira and Bentley.*)

Dose.—Of Acid. gr. ½ to ¾ of a grain, frequently repeated; it is seldom given in substance, and is best administered dissolved in a large quantity of distilled water without any flavouring ingredient; thus gr. ½ may be dissolved in Oj. of water, and ℥ss. of this taken every hour until cooling is produced. The following is used as a substitute for James's powder: Tartar emetic gr. i; sulphate of potash, in fine powder, gr. xx.; mix. Dose, gr. ½ to gr. iij. every hour.—*Lepine Tartari Emetici*, D. *Vinum Antimonii Potassio-tartratis*, L. *Vinum Antimonials*, P. "Tartar emetic, 3i; boiling distilled water, ℥j ounces, grij; rectified spirit of wine, ℥ij ounces, ℥ij; dissolve in the water, filter, and add the spirit." H. "Dissolve gr. xl. of tartar emetic in Oj. of sherry." L. H.) Every fluid ounce contains gr. ij of tartar emetic. Dose, as a diaphoretic, 3 min. ex. in min. xxx., every hour.

Incompt.—The acids; the alkalies, and their carbonates; bitter vegetable infusions; the earths; some of the metallic oxydes; hydrosulphurets; the acetates of lead; corrosive sublimate; decoctions and infusions of most of the bitter and astringent vegetables, as those of cinchona, simaruba, galls, catechu, &c. The solution is wine spoils by keeping.

LABURNUM SEPIUM, SEMINA, RADIX. D. *Common Barberry; The seeds and root of Berberis vulgaris.*—This is an indigenous plant, growing commonly in waste places and by roadsides. It belongs to the natural family *Cinaceæ*, and to the Linnæan class and order *Hexandria Monogynia*.

This plant, though still retained in the Dublin Pharmacopœia, in the present day is never employed in regular practice. A decoction of the root is a popular diet drink in chronic cutaneous diseases and in rheumatism. It produces gentle diaphoresis, and also promotes the flow of urine. Guibourt has found *Berberin* in the root of barberry.

LABURNUM. D. L. E. *The stone (twigs, E.) of Solomon Seal-vulgo. Woody nightshade; Bittersweet.*—Indigenous, growing in hedges and thickets. It belongs to the natural family *Solaceæ* and to the Linnæan class and order *Pentandria Monogynia*.

P. P.—The twigs, as met with in the shops, are dark brown externally, white within, light and spongy in the centre; when fresh they have a faintly aromatic odour, which is lost by drying; the taste is at first bitter, afterward mucilaginous, without the sweet so agreed to the plant.

C. P.—According to the analysis of [illegible] they contain, besides some salts of lime and potash, and other unimportant substances, a peculiar alkaline principle, insoluble in water, soluble in alcohol and ether, colourless, inodorous, white, permanent in the air, which the has called *Solanin*, the medical properties of which have not been yet fully examined. Bitter and narcotic active properties to both water and alcohol.

Th. V.—A decoction has been employed as a [illegible] rheumatic and venereal affections, and in chronic diseases of the skin. Its medical properties are, however, very feeble and in the present day it is scarcely ever employed.

D. & M. or Ann.—*Decoctum Dulcamarae*, D. L. E. (Dulcamara twigs, chopped, ℔ j; water, [illegible]; boil down to [illegible] ℥xxiv.) Dose, ʒij. to ʒiij., two or three times a day.

Guaiacum lignum, *D. L. E. Wood of Guaiacum officinale.*

Guaiacum resina, D. L. Guaiacum, E. *Resin (obtained by heat from the wood, E.) of Guaiacum officinale.*—This tree is a native of Jamaica, of St. Domingo, and of many other West India Islands; it belongs to the natural family *Zygophylleæ*, and to the Linnæan class and order *Decandria Monogynia*.

B. C.—A tree attaining a height of 30 or 40 feet, with a rounded [illegible] head, heavy wood, leaves evergreen, [illegible]. Flowers pale blue, in clusters at the axils of the upper leaves, and yellow stamens, appearing [illegible].

P. P. & M. or Pulv.—The wood, which is covered with a light [illegible] and resinous, which is obtained as a spontaneous exudation from cracks in the wood, or by incision made into it; or artificially procured by boiling the chips and refuse of the wood which have been previously freed from the sap; the latter are of the opposite extremities of the [illegible] the chips and refuse of the wood in a strong solution of potassa with which the [illegible] the liquid.

P. P.—Guaiacum wood, commonly termed Lignum vitæ, is imported in logs or billets about nine inches in diameter and of [illegible] these lengths; it is extremely hard, so much so as to sink in water; the young wood (*alburnum* or *sap-wood*) of a pale yellow colour, and the old wood (*durumen* or *heart-wood*) of a dark green colour, the latter [illegible] to 1·333, so that it sinks when thrown into water. [illegible] wood, the wood is termed *cross-grained*; they have no [illegible] colour, aromatic odour. Guaiacum resin is a [illegible] fracture, breaking with a resinous fracture; the [illegible] much in colour, being partly brownish, partly reddish, and partly greenish; but it always becomes green when exposed to the air and sun. The odour and taste are similar to [illegible] those of the wood. The [illegible] to 1·23.

C. P.—[illegible] wood [illegible] of a peculiar [illegible]

of purple resin, besides gummy matter, mucous extractive, lignin, &c. Its active properties are probably due to the resin and to the tannin. The latter, the physical properties of which have been described above, is insoluble in water and in the fixed oils, but is soluble in alcohol and in solutions of the alkalies. The alcoholic solution is precipitated by water and by muriatic acid, but by acetic acid or nitric acid occasions no change at first, but after some hours the liquid becomes green, then blue, and at last a green precipitate falls down; dropped on iron or on a transverse section of a potato, a blue colour is produced on exposure to the air. Guaiacum resin is fused by heat.

Administration.—Various resinous substances are frequently mixed with or substituted for, guaiacum; these may readily be detected by applying the tests of the Edinburgh Pharmacopœia for the true resin: "Fresh fracture red, slowly passing to green. The powder slowly strikes a lively blue colour on the inner surface of a thin paring of a raw potato." The shavings may be readily distinguished from those of any other wood by the action of nitric acid, which communicates to them a temporary bluish-green colour.

Uses.—Guaiacum wood and its resin are stimulating diaphoretics, and are, consequently, inadmissible in all states of excitement or acute inflammation of the system. They are well adapted for chronic rheumatism of the old or debilitated; for the atonic stages of gout; for chronic diseases of the skin, especially those of a squamous, papular, or scurfing character; and for all the forms of secondary syphilis, provided there is no irritation or inflammatory tendency in the alimentary canal. When first introduced into the practice of medicine, they were believed to possess antivenereal virtues, little, if at all, inferior to mercury.

U. S. & M. of Ass.—The resin may be given in powder, dose from gr. x. to 3ss.; it may be administered in the form of bolus with treacle or mucilage of gum, or suspended in water by means of mucilage. The wood is not administered in powder.—*Decoctum Guaiaci Compositum*, D. (Guaiac (rasped), 3ij.; sarsaparilla root, cut (rasped, E.), 3v. (3j. E.); liquorice root, bruised, 3ij. E.); (raisins, 3ij. E.); water, *by measure*, Oiv. (O—j., E.); boil the guaiac (and raisins, E.) in the water down to one half (Oij. E.), adding the liquorice and sarsaparilla towards the close, and strain.) The old *Decoctum of the woods*, a substitute, in dose of f3ij. two or three times a day.—*Aqua Calcis* comp., D. (Guaiac shavings, 3ss.; liquorice root, cut and bruised, 3j.; sassafras bark, bruised, 3ss.; coriander seeds, 3ij.; lime-water, *by measure*, Oss.; macerate without heat for two days in a close vessel, frequently shaking the strain.) Seldom used at present. Dose, f3ij. to f3iv. *Mistura Guaiaci*, L. E. (Guaiacum resin, 3ij.; sugar, 3ss.; mucilage, 3xx.; cinnamon-water, fʒxx.; rub the gum with the sugar and mucilage, adding gradually the cinnamon-water.) Dose, f3ij. to f3ss. two or three times a day.—*Pulvis Guaiaci*, L. E. (Guaiacum resin, bruised, 3j.; in coarse powder, E.) 3iv. (3vj. L. E.); a scruple with treacle, &c. (3j. L. E.); evening

of a brown colour, smooth, wrinkled; in the centre is the white, hard, woody wood; between it and the outer bark the inner bark is white and mucous; the thickness of the root varies from that of a quill to that of the little finger. The bark (*cortex radicis*) is in pieces of various lengths, quilled, tough, and pliable; it is covered with the thin brown cuticle epidermis; the true bark is of a yellowish-white colour, and fibrous. It has a slight nauseous odour; the taste is at first bland, but leaves a hot, acrid impression upon the tongue and fauces; in the fresh state, the bark has a very acrid taste.

C. P.—The inner bark of the mezereon contains a mucoso-resinous principle, which has been named *daphnin*, and an acrid resin, in combination with wax, sugar, colouring matter, woody fibre, &c. It yields its active principles to water and to alcohol.

Adulterations.—Various similar barks and roots are either mixed with, or substituted for, mezereon; they may be distinguished by not having the same acrid taste. The woody part, which constitutes the great portion of the root, is perfectly inert, and, consequently, should not be employed.

Ph. L.—Mezereon is a stimulating diaphoretic, but its properties as such are very feeble in comparison to its acridity, in consequence of which it is not much employed at present. It was formerly in high repute as an alterative remedy for venereal nodes, and in other forms of secondary syphilis.

U. S. M. or Auct.—In decoction, in doses of ʒiv. or ʒv., three or four times a day.—*Decoctum Mezerei*, U. (Mezereon bark, ʒij; liquorice root, bruised, ʒss.; water, Oij.; boil down to Oj., and strain.) It also enters into the composition of the compound decoction of sarsaparilla.

SARSAPARILLA, E. U. HARRAPARRILLA, D. *Root of Smilax sarsaparilla, Pursh—Smilax officinalis*, L.—*and probably also of other species*, E. *Sarsaparilla*.—The various species of the genus sarsaparilla, from which the medicinal root is obtained, are inhabitants of the warmer regions of South America, especially Peru and Mexico. They are placed in the natural family *Smilaceæ*, and in the Linnæan class and order *Dioecia Hexandria*.

E. C.—Decoction, compound; portable ale, pound; bottle ferrum, with sea rosemary, mixed with a three-ounce spoon, once and one-quarter; berry sherry mixed, one-quarter one or three-quarter, acids.

U. S. & *Ed. Pr.*—The parts; they are the up the white rear round, and if not be put one.

E. *Pr.*—Several varieties of sarsaparilla are met with in English commerce; the most important of these are, Jamaica, Honduras, Brazil, and Lima Sarsaparilla. They are met with in bundles formed of the rolled roots; in the Brazilian variety, the roots are cylindrical. The bundles are generally from twenty inches to three feet in length; the roots consist of a *rhizoma*, the chemp of druggists, which, however, is frequently absent, and of numerous roots. The rhizoma is from six inches to a foot in length, about the thickness of a swan quill, cylindrical, flexuous, sometimes compressed, with scars or joints over-

fibres attached to them; of a reddish-yellow or brown colour externally, the inner bark being more coloured and resinous than the centre (medullary) woody, which, and the pith, are nearly white. The root has scarcely any odour; the taste is mucilaginous, sweetish, and somewhat acrid, leaving an acrid sensation on the back part of the throat and fauces. *Jamaica Sarsaparilla* has a lively red tinge and is attached in tufts rather than the other sorts, whence it is sometimes called *red-bearded sarsaparilla*; it is the most esteemed. *Honduras Sarsaparilla* is of a grayish-brown colour, and has few rootlets attached; the inner bark is so amylaceous, that when the root is rubbed or broken, a white pearly powder is diffused around it; this is the sort generally used in the shops for cutting into pieces. *Brazilian Sarsaparilla* resembles the last in colour and appearance, but is almost free from rootlets, and the *cheap* or *Lima Sarsaparilla* resembles in appearance Jamaica, for which it is often sold; its colour, however, is grayish-brown, and the bark is invariably attached, being folded into the centre of the bundle.

C. P.—Various analyses have been made of sarsaparilla, which appears to consist of volatile oil, acrid oil, a white crystallizable principle, which has been called *smilacin* (*parsaglin*, *salseparin*, *parillinic acid*), of various saline, acrid, bitter resin, lignin, starch, and mucilage. Its active properties to boiling water by simple maceration; but a continued boiling to which it is submitted, by the directions of colleges, for preparing the decoctions, the *Lisbon*, and the *Dublin*, is not only perfectly useless, but highly injurious, and to this we may ascribe the great discrepancy of opinion which exists on the medicinal properties of this drug.

Adulterations.—The roots of various allied species which possess any medicinal property whatever, are mixed and sold with the true sarsaparillas; and in this country the inferior kinds are sold for the finer qualities. The former brand may be known by the taste, which is the surest criterion; the latter by attention to the characters of the different species as given above.

Th. E.—Notwithstanding the little esteem that sarsaparilla is held in by many practitioners, a necessity possessing the properties it does in the recent state, as described by Dr. Cullen, can scarcely be doubted; unless, as before observed, we deny medicinal properties to the pharmaceutical processes to which it is submitted. Under its use, unquestionably, confirmed syphilis, produced, and secondary syphilitic affections, especially nodes, pains, ulcerations of the throat, and cutaneous eruptions, have been speedily cured in these clients, however long they have been under the agency; and I must say with much reason, to the mercurial practice which patients are submitted while undergoing what is called the alterative method. The question of the powers of sarsaparilla in secondary syphilis is worthy of still further investigation, and I hope to see the high value of this drug, in many cases, established beyond a doubt. [illegible] and in my opinion [illegible]

a weak infusion prepared with boiling water, in the same manner and of the same strength as the compound infusion of the British Pharmacopœia, substituting boiling distilled water for the lime-water contained in that formula.

D. S. N. as *Decoctum* powder the dose is from ℈ss to ʒss if it may seldom administered in this form; but if the powder be good, its merits may be ascertained by the taste. It might be proved the best mode of giving the medicine: it may be made into a bolus with *Confectionem Sarsaparillæ* comp. D. (Sarsaparilla root, previously cleaned with cold water and sliced, ʒi.; lime-water, ℥x.; macerate for 12 hours in a close vessel, shaking it occasionally; and strain.) Although lime-water is herein ordered, it is not so good a solvent for the constituents of sarsaparilla as distilled water. Dose, ʒiss. to ʒvj., two or three times a day.—*Decoctum Sarsaparillæ*, D. *Decoction of Sarsa*, L. E. (*Sarsaparilla*, sliced and cleansed with cold water, D.), ʒiv. (ʒss., L. E.); boiling (distilled, L.) water, ℥xv. (℥vss., L. E.); macerate with a moderate heat (near the fire, L.) for 4 (2, E.) hours in a vessel lightly covered; take out the root, bruise and reduce it (macerate for two hours further, L.); boil down to ℥ij. by measure (℥j., L. E.), and strain. Dose, ʒiss. to ʒvj., three or four times a day.—*Decoctum Sarsaparillæ fortius* (*Sarsa*, L. E.) comp., D. L. E. (Decoction of sarsaparilla, boiling, by measure, ℥iv. (℥vss., L. E.); sassafras chips, guaiac turnings (bruised liquorice root, of each, ʒi. (ʒss., L. & E.); oval cubebs (bruised, E.), ʒij. (ʒiv., E.); boil for a quarter of an hour, and strain.) The *old formulæ of same words*. Dose, ʒiss. to ʒvj., three or four times a day.—*Extractum Sarsaparillæ*, D. *Extractum Sarsæ*, L. (Sarsaparilla, sliced, ℔j. (℔iss., L.); boiling (distilled, L.) water, cong. j. (cong. ʒ., L.); macerate for 24 hours; then boil down to ℥iv. (cong. ¼, L.), and strain the liquor while yet hot; lastly, evaporate to a proper consistence.) Dose, 3ss. to ʒij.—*Extractum Sarsaparillæ fluidum*, D. (Sarsaparilla, sliced, ℔j., water, by measure, ℥xij.; boil together for an hour, and pour off the liquor; then add ℔j., by measure, of water, repeat the boiling and pouring off, express strongly the liquor from the residue, set aside the mixed liquors that the feculæ may subside; then evaporate the mixture by continual boiling down to ʒxxx., and add ʒij. of rectified spirit).—*Ext. Sarsæ fluidum*, L. (Sarsaparilla, cops, ℔j.; boiling water, Oij.; digest the root for two hours in 4 pints of the water, take it out, bruise and re-digest it, and boil for two hours; then pat squeeze out the liquor; boil the residue in the remaining 2 pints of water, and filter, and squeeze out this liquor also; evaporate the mixed liquors to the consistence of syrup; add, when the product is cool, as much rectified spirit as will make it all (℥xv). This fluid extract may be aromatized with volatile oils or spirit of essences.) Notwithstanding the introduction of the above formula into the last edition of the Edinburgh Pharmacopœia, it is a very peculiarly powerful species that the extracts are perfectly inert, by some very powerful process they are treated as objects in the manufacture from [illegible] Sarsaparilla, D. *Sarsaparilla Sarsa*, L.

E. (Sarsaparilla, sliced, 2½ (Troy, L. ℔); boiling water, sufficient for sarsaparilla to be covered for 24 hours; then to 2½ (Troy, L. ℔) and strain the liquor while hot; and sugar (Troy, L.) so as to make a syrup.] Dose, fʒ ij (Troy) with water, or as an adjunct to the decoction.

[U. S. P.—*Syrupus Sarsaparillæ compositus.* Take of sarsaparilla, bruised, 2 lbs.; guaiacum wood, rasped, 8 oz.; dried rose, senna, liquorice root, each, 4 ounces; glycyrrhiza root, bruised, 2 oz.; oil of sassafras, oil of anise, each, 5 minims; oil of gaultheria, 3 minims; diluted alcohol, 10 pints; sugar, 8 lbs.

Macerate the sarsaparilla, guaiacum wood, rose, senna, and liquorice root in the diluted alcohol for 14 days; then express and filter. Evaporate the tincture by the water-bath to 4 pints, and add the sugar, and this being dissolved with the aid of heat, remove any scum which may form, and strain while hot. Lastly, having rubbed the oils with a small quantity of the syrup, mix thoroughly with the remainder.

Another method of preparing the compound syrup of sarsaparilla is by substituting *water*, q. s., for the alcohol, the other ingredients being used in the same proportions, thus: Macerate the sarsaparilla, guaiacum wood, roses, senna, and liquorice root with 8 pints of water, and let it stand twenty-four hours; then transfer the whole to an apparatus for displacement, and pour on water gradually until 1 gallon of filtered liquor is obtained. Evaporate this to 4 pints, then add the sugar, and proceed in the manner directed for syrups. Lastly, rub the oils with a small portion of the syrup, and mix them thoroughly with the remainder.

A table-spoonful 3 or 4 times a day, in a wine-glass of water, is the ordinary dose; and it is much employed in secondary syphilis, as well as other syphilitic manifestations of disease, although its powers are much overrated, being only valuable as an auxiliary to more potent remedies. The various modified, constitutes the basis of all the quack nostrums sold under the name of Panacea, Catholicon, Indian Vegetable Syrups, &c., by the sale of which an unbounded revenue has been levied by the tribe of impostors, who ever [illegible] gullible [illegible].]

[*Hydro-alcoholic fluid Extract of Sarsaparilla.*—This is the most recent preparation, in which the virtues of the root are supposed to be concentrated, it being stated that one part represents 2 parts of sarsaparilla; and in this form it is much used in the United States. Messrs. Duke and Foster, of New York, prepare it thus: 8 Rad. Sarsaparillæ, in pieces, are digested [illegible] Proof Spirit, 120 parts. By displacement with the same menstruum, and then distilled in a water-bath, till there remain [illegible] parts in the still. This portion being filtered, one part of sugar to every [illegible] is to be added.

Substitutes for Sarsaparilla.—[illegible] is [illegible] and is prepared by J. Mullen, of New York. [illegible] Compound Decoction of the Pharmacopœia of the [illegible] [illegible] [illegible]

...ous oil [illegible] and a few drops of sulphuric acid, then filter and dilute. It [illegible] to red-violet groups. When dry, it is slightly [illegible], in solution, acrid, and somewhat bitter. It is to the presence of this acrid that the various preparations of sarsaparilla owe their remarkable property of frothing, and there can be little doubt but it is the most active constituent of this remedy. See the *French Universal Pharmacopœia*, and Scattergood's *Mat. Med.*]

SASSAFRAS, D. L. E. *The root (inner cort. volatile oil, Ph.) of Laurus sassafras*, D. L., *of Sassafras officinale*, E. Sassafras.—The sassafras tree is indicated by all the colleges, but the Edinburgh has adopted the nomenclature of Nees von Esenbeck. It is a native of North America, and belongs to the natural family *Lauraceæ*, and to the Linnæan class and order *Enneandria Monogynia*.

S. C.—A vol. sesquiter. [illegible] was obtained, collected between 40° & 60° [illegible] Reaumur thermometer, yielded, according to the author's [illegible] of a very fine colour.

P. U. S. & M. or Pharm.—The root, and the [illegible] of which is obtained that it is mentioned.

P. P.—Sassafras root is imported in various sized, [illegible] pieces or logs, covered with a reddish-brown bark, which is often partially stripped off; the wood is of a reddish-yellow colour, light, and very porous; it has an aromatic, agreeable odour, somewhat resembling fennel, and a warm, aromatic taste. The odour and taste of the bark are stronger than of the wood. The volatile oil is of a pale-yellow colour, has an analogous odour and taste, and is heavier than water.

U. P.—Sassafras root has not been analyzed; its active properties depend on the volatile oil, of which the wood contains about one per cent. The medicinal virtues are extracted both by water and alcohol.

Ta. B.—A stimulating diaphoretic, but its powers as such are so inferior that it is never prescribed alone. The wood forms a constituent of the *compound decoction of sarsaparilla*, and of the *compound decoction of guaiacum*; but the continued boiling to which these preparations are submitted must completely dissipate the volatile oil, the active principle of the sassafras.

U. & M. or Adm.—It may be given in the form of infusion, prepared by infusing ʒi. of the chips in Oi. of boiling water for an hour, of which fʒij. may be taken three or four times a day.—*Oleum Sassafras*, U. S. Not seldom used; it is an aromatic stimulant, in doses of [illegible] to min. x.

CHAPTER VIII.

DIURETICS.

Diuretics are medicines which augment the secretion and promote the discharge of urine. These effects are produced in a different manner by different substances; some being taken up by the absorbents to the secreting vessels of the kidney, being thrown out with the current of the circulation, and carried, without undergoing any decomposition, *in transitu* to the urinary organs; others are partially acted on by the digestive organs, and some of their more important parts thus eliminated are carried by the circulation to the kidneys, which are thereby stimulated to increased action. A third class of substances acts primarily on the stomach, the effects they excite being secondarily communicated by sympathy to the urinary organs. In whatever manner the action of diuretics is produced, their general effect is to diminish the watery part of the blood, and by this means promote the absorption of fluid collected into any of the cavities or into the cellular membrane. Hence dropsy is the disease in which they are principally employed, and when the discharge of urine can be excited by their use, the effused fluid is in general removed more speedily and completely than by any other means, and with less injury to the patient than by any other remedy. But they are most uncertain in their operation, and it frequently happens that, although the discharge of urine is much augmented, the dropsical swellings are not removed. The action of diuretics is also much modified by the state of the skin, and therefore it frequently occurs that if the surface of the body be excited by exercise or warmth after the administration of a diuretic, its action will be directed from the kidneys to the vessels of the skin, and diaphoresis will be occasioned. A combination of nitre seems also to be necessary to the full action of diuretics, and, consequently, some remedies, as the essential oil of turpentine, &c., which, if given in small doses promote the urinary discharge, when given in larger doses, so as to act on the bowels, will scarcely produce any apparent influence on the functions of the kidneys. Two important rules are to be attended to in the administration of diuretics. The first of this class are to keep the surface of the body warm, and promote the operation of the cutaneous [illegible]

[Much obscurity rests upon the whole subject, and the researches of Wedekind, Mueller, and others, have thrown little light on the subject. Some of the articles enumerated under this class possess this property, but they prove to act upon the economy in different ways. This is shown with [illegible] diuretic properties, which [illegible] in preventing the [illegible]

dropsy depends, the ordinary office of the kidneys being often performed very satisfactorily under the laws of vitality by an action adequate to the removal of the disease. So, also, quinine in the same way often saves the dropsy which is among the sequels of intermittent fever, by improving the condition of the digestive organs, and by many diuretic powers, although the effusion does pass off by the urine and other excretory outlets with great rapidity.

While it must be admitted that catharsis is often incompatible with diuresis, as stated by the author, yet it is equally certain that the hydragogue cathartics often succeed in causing dropsical effusions, especially acetate and hydriodates, when all the diuretic agents have been employed in vain. It will be found, however, that whenever they produce large fluid discharges from the bowels, the kidneys are simultaneously stimulated to inordinate action; and indeed, dropsy is seldom cured until all the emunctories of the body are employed in draining off the effused fluid, the skin being opened as well as the urinary and alvine discharges. This explains why it is that diuretics are said to be "most uncertain in their operation, and that the dropsical swellings are not removed, even though the urinary discharge is augmented." They are too often prescribed without reference to the pathological state upon which the dropsy depends.]

Tinctura nitratis æthereæ, D.—Spiritus æthereus nitrosus, L., E.—Nitrous ethereal spirit; Hyponitrous ether with (four volumes of, E.) rectified spirit; Spirit of nitric ether; Sweet spirits of nitre.

Pr. E.—A transparent, colourless liquid, with a peculiar fragrant, ethereal odour, and a pungent, sweetish, acidulous taste. The specific gravity prepared by the process of the three British Pharmacopœias, various: that of Dublin being .900; of London, .834; and of Edinburgh, .947.

C. E.—The preparation is a mixture of hyponitrous ether and alcohol in variable proportions. It is very volatile, producing much cold during its evaporation; is very inflammable, and burns with a whitish flame. It mixes with alcohol and water in all proportions. By keeping, it gradually becomes acid.

Pur.—*Dub.*—"All on the residuum of the distillation of nitrous ether the most [illegible] employed in this operation for manufacturing the nitric ether are found to [illegible] with a greater heat of the water-bath; after the desired liquor is [illegible] an equal measure after the separation of the nitrous ether, pure, and not sufficient [illegible] of potash to saturate the free acid, as indicated by litmus paper; but [illegible] Lond. with the moderate heat of a water-bath as long as any drops come over." The Dublin Pharmacopœia mentions that a second process, nearly similar to that of Dublin, and which is also usually followed.—*Dub. Lond.*—"Add gradually six measures [illegible] of water and to [illegible] of rectified spirit, mix and [illegible] parts; heat it [illegible] cool [illegible] measure of rectified spirit. Or, [illegible] parts of nitric acid [illegible] cool the mixture with a cold chain, and add a [illegible] measure of rectified spirit, and [illegible] and the [illegible] of

[redacted]

Adulterations.—Spirit of nitric ether often contains free [redacted] acid, probably from being too long kept. It is [redacted] with water and with alcohol; the tests of the *Edin. Pharm.* [redacted] these impurities: "Density, .847 (850). D.: .834 [redacted] vessels boldly or not at all with solution of bicarb. [redacted] when agitated with twice its volume of concentrated [redacted] nitrate of lime, twelve per cent. of ether slowly [redacted]."

To E.—It operates as a mildly stimulating diuretic [redacted] such intention is administered in despised affections [redacted] when occurring in children. It is most generally [redacted] in addition to other remedies of this class, as digitalis, [redacted] diuretic operation of which it renders more certain. Spirit [redacted] tric ether sometimes fails to act on the kidneys, when [redacted] promotes the cutaneous secretion, and, consequently, [redacted] employed with benefit in combination with the warm [redacted] anæsthesia in the early stages of febrile diseases. Chrestien [redacted] that, as a diuretic, he has found sweet spirits of nitre "[redacted] valuable in dropsy connected with diseased kidney, and [redacted] ful in the form associated with diseased heart."

D. & M. or Ann.—Fiss. to f℈j or f℥j every second or third hour; it is best given in water or in camphor mixture.—*Dose, pauca*, Swediaur. (Spirit of nitric ether and vinegar of squills, of each, f℥j.; pimpernel water, f℥ij.; compound spirit of horseradish, and syrup of ginger, of each, f℥j.; m.s.) Dose, f℥ss. two or three times a day.

Buchu, E. Diosma, L. Diosma crenata, pilis, D. *Buchu or Buchu; Leaves of various species of Barosma*, E. *Leaves of Diosma crenata*, D. L.—The various species of the genus Diosma, as it has been recently named, Barosma, from which the leaves of commerce is obtained, are natives of the Cape of Good Hope, and are placed in the natural family *Rutaceæ*, and in the Linnæan class and order *Pentandria Monogynia*.

B. C.—Small shrubs, with opposite, crowded, dotted leaves and [redacted] flowers.

P. P.—As met with in the shops, buchu consists of the leaves of various species, two in particular *B. crenata*, and *B.* [redacted] interspersed with broken stalks and seed vessels. The leaves are smooth and shining, dotted with glands, [redacted] they are of a pale yellowish green colour, have a [redacted] odour resembling a mixture of rue and peppermint, [redacted] taste, leaving a sense of coldness on the tongue. [redacted] broken which I had an opportunity of examining [redacted] of the leaves of *B.* [redacted]

of any consequence, was probably gathered before the plant flowered.

C. P.—Recent leaves consist of volatile oil (upon which their medicinal properties chiefly depend), gum, resin, extractive, &c. They yield their virtues to water and to alcohol. The volatile oil is of a yellowish-brown colour, lighter than water, and of the same odour as the leaves; the extractive has been named *Diosmin*.

Th. P.—Buchu is a stimulating diuretic; the volatile oil is taken into the circulation, and it communicates its odour to the urine soon after it has been taken. Independently of its stimulating the kidneys to increased action, it seems to act as a direct tonic to the mucous membrane of the urino-genital organs; thus, it is found most useful in chronic mucous discharges from the bladder and urethra, in diseased prostate, in irritability of the bladder and in some forms of incontinence of urine. At the Cape of Good Hope, the powdered leaves are used as a vulnerary, and a spirit distilled from them is employed in dyspepsia after dinner.

D. & M., *ex Aqua*.—In powder (a heaped spoon), 1 j. to 3ss.—*Infusum Buchu*, D.—*Buchu*, L.—*Diosmin*, L. (Buchu leaves, 3ss. (Dr. L. E.); boiling (distilled, L.) water, by measure, 1pint (O., L. P.); infuse for 1hour (two, L.) hours, and strain.) Dose, fʒj. to fʒij.—*Tinctura Buchu*, D. E. (Buchu leaves, 3ij. (3v., L.); proof spirit, by measure, 1pint (1lb., L.); macerate for 7 days and filter. "May be also made quickly and conveniently by percolation." L.) Dose, fʒj. to fʒij., in any convenient vehicle.

CAMBOGIA.—The diuretic properties of gamboge have been little noticed, and a formula given for its administration with that intention. (*See page 91.*)

CANTHARIS, L. E. CANTHARIS VESICATORIA, D. *Cantharis vesicatoria*: *The whole fly*; *Cantharides*.—This, the *Meloë vesicatorius* of Linnæus, belongs to the class *Insecta*, and to the order *Coleoptera*. It is a native of the middle and southern parts of Europe, and has also been met with, but rarely, in England. It frequents the ash, the privet, the lilac, and the honeysuckle, and is also found on the alder, the rose, the plum, the elm, and the poplar, upon the leaves of which trees the insect feeds. In the month of June, cantharides are collected in the South of Europe. In the morning, before the rising of the sun, while the insects are still torpid from the moisture of the night, men, whose faces and hands are covered with masks and gloves, having spread a cloth upon the ground, shake the trees violently; the insects fall into the cloth, are immediately gathered in sieves, and are killed by exposure to the steam of vinegar; they are then dried in sieves. When perfectly dry, cantharides are immediately put into air-tight boxes containing a little sulphuret of lime or camphor, the former to keep them dry, and the latter to preserve them from the attacks of mites and other insects, to which they are devoured.

P. P.—Such cantharis is from ¾ to 1in. long, and about ¼

grain and a half in weight; it has two wings, one of which is of a beautiful golden-green colour; two antennæ, or feelers; six legs, inferior, folded; antennæ black, ribbed, longer than the head; and a longitudinal furrow along the head and back. The females have a foul, disagreeable odour, and a reddish, very acrid taste. They are readily enticed to powder, which in the dried state presents numberless glistening green particles of the insect; this is their most distinguishing characteristic. Dried and powdered they, in the human stomach, have acrid effects after a time.

C. P.—Cantharides consist of a white crystalline substance named *cantharidine*, of a yellow fat oil, a colouring green matter, yellow acrid substance, a black substance, containing uric acid and phosphoric acids, and ammonia. Its active properties are owing to cantharidine, which may be obtained by acting on the powder with rectified spirit, distilling off the spirit, and crystallizing the neutral substance, insoluble in water, but soluble in boiling alcohol, ether, the fixed and volatile oils, and in the alkalies.

Adulterations.—By the characters given above cantharides may be distinguished from other insects which resemble them, and as the Continent are said to be frequently mixed with them. They are best protected from the attacks of mites, which destroy their activity, by keeping in well-stopped bottles and adding a few drops of *strong* acetic acid (Pereira), or a few grains of camphor, which I have found very effectual. In powder they are said to be adulterated with *euphorbium*, a fraud not easily detected.

To. E.—The most important medicinal property of the tincture is its vesicating power, which will be considered hereafter. (See *Epispastics.*) In large doses, it is a powerful irritant poison; in small or medicinal doses, it acts as a stimulant to the genito-urinal organs, producing diuresis, and exciting the venereal appetite; but according to Christison, the latter effect is not produced unless it be taken in poisonous doses. As a diuretic cantharides are much used in consequence of the dangerous symptoms which sometimes arise even from small doses; these also have occasioned them also that they prove beneficial in incontinence of urine caused by paralysis of the neck of the bladder, and when it occurs in young persons during sleep. They have also been highly praised in many as a remedy for gleet, leucorrhœa, and chronic mucous discharges from the urinary organs.

D. & M. ex Aqua.—Cantharides are seldom employed internally in the form of powder; the dose is gr. ss. to gr. ij. mixed with extract of liquorice or conserve of roses. Tincture (tinct. cantharidis, U. S., tinctura cantharidis, Ed., tinctura cantharidis fortior, Dub.) is usually made with proof spirit, by measure, one part to ten, macerated for 7 (14, Ed.) days, and filter. It may be obtained more speedily and expeditiously by percolation; powder the cantharides, mix it with coarse powder, and let it stand for a short time; then pack in the usual manner, and pour on proof spirit, by measure, one part to ten, let it stand for 12 hours before the process of percolation is commenced. Ed. Dose, min. x., gradually increased to xxx. or xl. It should be given in a large quantity of some mucilaginous or saccharine liquid or broth.

In cases of poisoning with narcotics, we are not acquainted with any remedy, but emetics excellent and contraindicated; while bleeding, prompt and bold, opiates by the mouth and acetous and general antiphlogistic treatment, should be resorted to.

DIGITALIS PURPUREA, Linn. U. Digitale pourpre. L. Digitalis. G. The leaves (and seeds, L.) of *Digitalis purpurea*, Linn. (*Digitalis fulgentea* Lamark) herb, belonging to the natural family *Scrophulariaceæ*, and to the Linnæan class and order *Didynamia Angiospermia*.

[illegible]

P. M.—The dried leaves of digitalis, when properly preserved, are of a brownish-green colour; they have scarcely any odour, but the taste is nauseous and acrid.

C. P.—They consist of volatile oil, a concrete fluorescent volatile matter, fatty matter, extractive, resin, &c.; and, according to some analyses, a peculiar alkaloid which has been named *digitalia*. The leaves yield their active properties to water, alcohol, ether, and the weak acids. The sesquisalts of iron produce a dark-red solution of gelatin a white flaky precipitate with infusion of digitalis indicates the presence of tannin.

Digitalis is not liable to adulteration. The powder should be of a fine green colour, and possess the acrid taste of the fresh plant.

T. E.—Digitalis, in small doses gradually augmented, operates as a special stimulant to the kidneys, increasing the secretion of urine, in somewhat larger doses, or when its use is continued for a longer period, it acts as a *sedative* to the vascular system. (See *Sedatives*.) As a diuretic in the various forms of dropsy, digitalis has acquired a high reputation; but later experience has shown that it proves most serviceable in those symptomatic dropsical effusions which take place in the cellular membrane of the extremities and of the face, and which depend on diseases of the heart, of the kidneys, or of the liver. It is also better adapted as a diuretic for persons of a weak or enfeebled habit of body, than for the strong or the robust; and should any inflammatory symptoms be present, antiphlogistic treatment should be had recourse to before employing digitalis. The diuretic action of digitalis is much promoted by combining it with small doses of calomel, or with other remedies of this class, as squill, juniper, the diuretic salts of potash, &c.; whereas it is much debilitated by preparations of iron and astringents combined with it.

U. S. M.—Dose, of the powder, gr. ss. every six hours, its operation being aided by the use of diluents, and the surface of the body should be kept cool; administered thus, it generally produces a copious flow of urine after the fifth or sixth dose.—*Infusum Digitalis*, U. S. P. (Digitalis 3ij. Boiling water Oj.); spirit of pimento, an

(℥j., L.; ʒiij., E.) boiling Distilled, L.; water, to extract, two (℥x., L.; ℥xvj., E.); digest for 4 hours in a covered vessel, strain through linen or calico, E.), and add the spirit. This is the best preparation of digitalis; the dose is ℥ij. to ʒvj. every six hours.—*Infusum Digitalis*, D. L. E. (Digitalis, dried and coarsely powdered, D.; in moderately fine powder, L. E.), ʒj. (ʒij., L. E.); proof spirit, *by measure*, ℥j. (℥ij., L. E.); water, to ℥viij. (℥x., L.) Infuse and strain. "Best, prepared by percolation, as directed for preparation of tincture; if ℥vij. of spirit be passed through the residue, it will yield about ℥viij. of infusion, containing in ʒj. the soluble matter of ʒj. of the leaves." (E.) This tincture, well prepared, has a greenish colour when viewed by transmitted light. Dose, min. xx. to ʒss. Some time ago it was the custom to give an infusion of broom-tops, sometimes with sweet spirits of nitre and compound spirit of juniper.—*Pilulæ Digitalis et Scillæ*, E. (Digitalis and squill, of each, one part; aloetic electuary, two parts; beat into a proper mass with mucilage of red roses, and divide into twenty-four pills.) An excellent diuretic pill. Dose, one pill every five or six hours.

Incomp.—Sulphate, and tincture of the muriate of iron; the preparations of cinchona bark; and the acetates of lead.

Juniperus communis, cacumina, fructus (fructus, D.), as officinal. D. L. E. *The tops, the fruit, and the volatile oil of the plant of the superior evergreens; Common Juniper*.—Indigenous; belongs to the natural family *Coniferæ*, and to the Linnæan class and order *Dioecia Polyandria*.

E. C.—A hardy shrub, from 4 to 12 feet high, evergreen; native of pine-woods, flowering in May, and ripening seeds, and a berry-like fruit, the second year, beginning then to ripen and to wither.

P. E. & M. et Phar.—The tops are to be cut before the plant flowers, and the berries are gathered when ripe; they are used with some heavy metallic oxide, rather than the berries by simple decoction.

P. P.—Juniper berries are spherical, somewhat larger than a pea, of a bluish-black colour; they have a strong aromatic terebinthinate odour, and a sweetish, pungent, terebinthinate taste. They are imported from Hamburg and from several of the Mediterranean ports. *Juniper tops* have a similar odour and taste, but possess it weaker. *Juniper oil* is limpid, transparent, lighter than water, and of a very pale yellow colour. It has the peculiar odour and taste of the berries in a marked degree. Its composition is $C^{10}H^{8}$, and its sp. gr. .911.

C. P.—The medical properties of the juniper are due to the oil, while only the berries contain, besides, resin, sugar, gum, malic and acetic salts of lime. The tops and berries yield their virtues to boiling water and to alcohol.

Th. E.—Juniper is a stimulating diuretic, promoting the secretion of urine, to which it communicates its peculiar odour. It is chiefly used as an adjunct or corrective to other diuretics, especially when its use is conjoined with dropsy of the kidneys, for it is particularly serviceable in this case.

D. & M. P.—*Dose*.—The berries may be given in the form of

brown, prepared by infusing for an hour in a covered vessel (℥ of the bruised leaves in Oxx. of boiling water. Dose, ℥ij.–iij.—a few times a day; the tops are at present scarcely ever employed, but might be given cubebed up with sugar or in some aromatic infusion, in doses of mxx. to mlx. ℞. It is to the presence of this oil that the spirit called *Genièvre* or *Hollands* owes its peculiar flavour and the diuretic properties it possesses.—*Spiritus Juniperi compositus*, B. L. P. (Juniper berries, bruised, ℥j (Troy, Lb.); caraways, bruised, and fennel, bruised, of each, ʒss. (℔ij., Lb.); proof spirit, Oxx. (Oviij., E.); water sufficient to prevent empyreuma (℔iij., Lb.)) macerate for 24 (48, E.) hours, add the water, and distil a gallon (Oviij., E.); "mix, and distil a gallon with a slow fire." L.) A powerful diuretic, introduced into the pharmacopœias as a substitute for *Hollands*. Dose, ℥ij. to ʒiv. Generally used as an adjunct to stimulating diuretic mixtures.

Pareira, L. E. *Root of Cissampelos Pareira; Pareira brava*.—This plant is an inhabitant of the West Indian islands and of the South American Main; it belongs to the natural family *Menispermaceæ*, and to the Linnæan class and order *Dioecia Monadelphia*.

℞—A decoction made with a woody, branching root, [illegible] silky [illegible], thrown [illegible], yellow, [illegible] heavy powder, resembling starch.

P. P.—Pareira root is imported in cylindrical pieces, from half an inch to three inches in diameter, and from five or six inches to three or four feet in length. It is covered externally with a dark-brown cortex, which is thin, and finely adhering; internally the wood is very porous, of a pale reddish-yellow colour. It is odourless, but has a somewhat sweetish, somewhat, intensely bitter taste.

C. P.—It consists of a soft resin, bitter extractive (*cissampelin*), on which its activity depends, fecula, nitrate of potash and other salts, colouring matter, &c. It yields no virtues to both cold and boiling water.

T. V.—Pareira is a tonic diuretic, acting specifically on the kidney organs, increasing their secretion, and, at the same time, checking discharges from the mucous membrane of the bladder and urethra. It is with the latter intention only that it is ever employed in practice; and according to Sir Benjamin Brodie, it has a great advantage over the copy mucous discharge of chronic inflammation of the bladder.

U. & M. or Adm.—In powder, a bad form, ʒss. to ʒj.—*Extractum Pareiræ*, L. E. (Prepared as extract of Gentian.) Dose, gr. x. to ʒss., generally given as an adjunct to the infusion.—*Infusum Pareiræ*, L. E. (Pareira, ʒvi.; boiling (distilled, L.) water, Oj.; macerate for two hours in a lightly-covered vessel and strain through linen or calico." E.) Much too weak a preparation; the quantity of root employed might be doubled with advantage. Dose, ℥ij. to ʒiss., three or four times a day. Christison recommends the infusion to be prepared with cold water and by the process of percolation, for boiling water dissolves completely extracts the bitter principle. (Dublin. Pareiræ, ʒvi.; Aquæ (Aquæ pur.) bullientis, Oj.; [illegible]

water (Oj.) boil down to Oj., with a gentle heat). Dose, fʒij.–fʒiij., three or four times a day. This is the preparation in most general use.

Uses.—The sequelæ of fever; the secretion of milk; the tincture of iodine.

Potassæ acetas.—*Acetate of Potash* (described in the section *Cathartics*), dissolved in water and given in small doses frequently repeated, operates as a mild but certain diuretic. It is most frequently employed as an adjunct to other remedies of this class in ascites and hydrothorax. Dose, as a diuretic, gr. x. to ʒj. It is best administered in decoction of broom rape or of Pyrola.

Potassæ nitras.—*Bitartrate of Potash* (described in the section *Cathartics*), in small doses diluted with water or combined with other diuretics, increases the secretion of urine remarkably, and, consequently, is very generally employed in all cases of dropsy. Dose, a *diuretic*, gr. xx. to ʒj. frequently repeated during a period, an excellent diuretic and refrigerant drink in febrile diseases is prepared by dissolving ʒi. or ʒij. of bitartrate of potash in Oj. of boiling water, and flavouring with lemon peel and sugar.—*Decoction of cream of tartar whey*, used for the same purposes, is prepared by boiling a dessertspoonful of the bitartrate in Oj. of new milk, and straining to remove the curd. Either of these drinks may be taken *ad libitum*.

Potassæ nitras, D. L. E. *Nitrate of Potash*; *Nitre*; *Saltpetre*; *Sal-prunelle*.

P. P.—A solid, colourless salt, in crystals, prismatic striated, generally six-sided, with dihedral summits, semitransparent, and having a cooling, saline, slightly bitter taste. *Sp. gr.* 1·93.

C. P.—It is composed of one eq. of potass, and one of nitric acid (KO, NO⁵), is anhydrous, permanent in the air, fusible by a heat below redness into a limpid liquid, in which state, when cast in moulds, it forms *sal-prunelle*; by a strong heat it is decomposed into oxygen, and hyponitrite of potash. Nitre is soluble in five parts of water at 90°, and in about half its weight of boiling water; during the solution cold is generated; it is insoluble in absolute alcohol.

Test.—Nitrate of potash is an article of the Custom Duties; it is imported from Bengal chiefly from the East India, where it is obtained by lixiviating the earth of the soil of certain districts, mixing out with water the other salts present, and evaporating; after repeated, but not perfect purification and recrystallization. The Public Offices direct the examination of "nitre purified" by dissolving in two parts of boiling water, allowing it to cool, &c., when it constitutes the Potassæ nitras purificatus.

Adulterations.—Nitrate of potash, as met with in commerce, is often contaminated with sulphate or nitrate of potash. The presence of the former is detected by solution of muriate of baryta, that of the latter, by solution of potass or silver, which produces a precipitation, or a solution of the salt in alcohol, which dissolves the nitrate, but not the sulphate.

Dose, in large doses, from gr. xxx. to ʒij. repeated as the urine

to the gastro-intestinal mucous membrane, producing sometimes nausea, vomiting, purging, and even death. In small doses, gr. xxx. to gr. xl., it increases the flow of urine, in which secreting it can be detected soon after it has been swallowed. It is generally employed as an adjunct to the vegetable diuretics in anasarca and ascites, but it is inadmissible in cases where there is any tendency to irritation or inflammation of the digestive tube. Nitrate of potash is greatly inferior as a diuretic to the acetate or bicarbonate, and consequently, in the present day, is more employed for its refrigerant properties. (See *Refrigerants.*)

Pyrola, D. E. Chimaphila, L. *Herb of Chimaphila umbellata*, *Ph. U. S.*; of *Chimaphila corymbosa*, L.; of *Pyrola umbellata*, E. Wintergreen; *Pyrole*; *Pipsissewa.*—This plant is a native of North America, but found also in the woods of Europe and Asia. It belongs to the natural family *Pyrolaceæ*, and to the Linnæan class and order *Decandria Monogynia.*

P. C.—A small perennial, under-shrub, with evergreen, coriaceous, and leathery leaves, and white flowers, in a small corymb, in June, July, and August.

C. U.—Although the stalks have a reputation by the vulgar, the leaves only are generally employed.

P. P.—The fresh leaves, when bruised, have a strong, unpleasant smell, but in the dry state they are odourless; they have a bitter, astringent, slightly aromatic taste.

C. P.—They contain bitter extractive, resin, tannin, &c.; the medicinal virtues probably depend on the combination of these three substances; they are communicated to boiling water by infusion, but more completely by decoction.

T. E.—Pyrola leaves operate as a mild diuretic, exerting a specific influence on the urinary organs, increasing the secretion of urine, and, according to many observers, diminishing the secretion of bilirubin. It has been chiefly used in dropsies occurring in the *fat* and debilitated, and in chronic mucous discharges from the bladder and urethra. In the advanced stages of *albuminuria*, where diuretics are sometimes called for, I have administered the decoction of this herb with the best effects.

D. & M. of Adm.—Never given in powder.—*Decoctum Pyrolæ*, D.; *Chimaphilæ*, L. (Pyrola, ʒj.; water (distilled, L.), *by measure*, Oj. (Oss., L.); "macerate for six hours, take out the pyrola, bruise, and replace it; boil down to Oij., by measure, and strain," D.; "boil down to a pint, and strain," L.) Dose, ʒij. to ʒiij., three or four times a day. An extract may be prepared by evaporating the decoction to a proper consistence; it is not used in Britain, but is much employed in America, in doses of gr. v. to ʒ ss.

Incomp.—The soluble salts of iron.

Sherry. U. S. P. The bark of *Stella Maritima*, D. L.; of *Syphilis Maritima*, E. *Syrill.*—A native of the shores of the Mediterranean, in France, and of Portugal; belonging in the natural sys-

ally *Lithontriptics*, and to the *Tonicum* class and order *Diuretics* of the Edinburgh.

P. P.—The entire bulb varies in size from that of the fist to that of a child's head, ovoid, covered externally with brown membranous, reddish (*squilla rubra*), or whitish (*squilla alba*) scales; internally, it is composed of thick, fleshy, concentric coats of a pale rose colour. Dried squill is in yellowish, transparent, lenticular slices, brittle, but readily attracting moisture, when they become flexible; it is odourless, but has an intensely bitter taste.

C. P.—Squill consists of a crystallizable glucoside, probably the active principle of the drug, a bitter principle, a bitter extractive matter, and some salts. It yields its virtues to water, alcohol, vinegar, and the dilute acids. The glucoside of iron, communicates a deep-blue colour to the solution, but it is not affected by gelatin or by tincture of iodine.

Th. E.—In large doses, squill acts as a narcotico-acrid poison; twenty-four grains of the powder having proved fatal. In small doses it operates as an emetic, expectorant, and diuretic. For the latter purpose it is usually given in combination with digitalis and calomel, when it seldom fails to produce its characteristic effects, and, at the same time, promote the absorption of the effused fluid or *dropsies*. Squill is better adapted for local than for general dropsy; it is generally held to be inadmissible when inflammatory symptoms run present.

D. & M. or *Acet.*—As a *diuretic*.—*Pulvis Squillæ*, 15.—(Remove the membranous integuments, cut the bulb in slices, dry with an inferior heat, reduce it to powder, and keep in glass bottles with ground stoppers.) *Dose*, gr. j to gr. xx, in the form of pill made with conserve of rose or some bitter.—*Tinctura Squillæ*, D. L. E. (Squill (in coarse powder) 3ij (5ss., L. E.); proof spirit, by measure, fʒij (fʒiij., E.); distilled water fʒ vij (fʒiij. L.) digest for the sediment, strain and preserve the clear liquor (strain, L.); "prepared by percolation as for tincture of cinchona, but without acidulating the pale bark" (E.). *Dose*, mxx to mlx. ext. An excellent diuretic in cases of dropsies or retention of urine.—*Acetum Squillæ* (D. L.) (Squilla fresh dried, fʒss (fʒiv., L.); vinegar, fʒxij (Oviij., L.); (fʒxx., E.); macerate, fʒij (Oss., L.; fʒiij., E.) strain (E.) with the residue, for 7 days (L.) (a gentle heat, L.) with the vinegar, for 7 days (L.) (a gentle heat, L.) with the vinegar, for 7 days (L.) (a gentle heat, L.) with the vinegar

strong hydrochloric or distilled water.—Tinctura Scillæ, P. Oj. (5 oz. to each pint of the menstruum.) Dose, fʒj to fʒij.

Scoparius, L. *Sarothamnus*, K. *Spartium scoparium*, Linnæus, D. *Tops*, fresh, L. *Tops of Cytisus scoparius*, L. K. *of Spartium scoparium*, D. *Broom tops.*—The common broom is an indigenous shrub, belonging to the natural family *Leguminosæ*, and to the Linnæan class and order *Decandria Decandria*.

U. S.—A fresh shrub, from three to six feet high, with long, slender, rush-like branches, and large, bright yellow, papilionaceous flowers.

E. P.—The fresh green tops, the only officinal part, have a peculiar odour when bruised, and a bitter, somewhat nauseous taste.

C. P.—Broom tops have not been analyzed; their medicinal virtues appear to depend on bitter extractive and carbonate of potash, which are extracted by boiling water.

T. E.—In the form of infusion or decoction, broom tops are an excellent and certain diuretic, seldom failing to produce a copious secretion of urine. The officinal preparations of broom tops are most generally employed as selected for the more active remedies of this class in dropsical affections.

U. S. & M. *or* Ann.—*Infusum Scoparii*, L. (Broom tops, fʒj; boiling distilled water, Oj.; macerate for four hours in a vessel lightly covered, and strain.) Dose, fʒj to fʒij. A bad preparation, much inferior to the decoction.—*Decoctum Scoparii*, L. (Broom tops and juniper tops, of each, ʒss.; bicarbonate of potash, ʒij.; water, Oss.; boil down to a pint, and strain.)—*Decoctum Scoparii comp.*, L. (Broom tops, juniper berries, and dandelion, of each, ʒss.; distilled water, Oss.; boil down to a pint, and strain.) Excellent diuretics, particularly the former, which scarcely ever fails to act on the kidneys. Dose, fʒj to fʒiv, thrice or four times a day.—*Tinctura Scoparii*, D. Proposed as the simpler substitute; seldom used. Dose, gtt. x to lx, two or three times a day.

Soda acetas, D. L. *Acetate of Soda.*

U. S.—In white, striated, prismatic crystals, of the oblique rhombic system. It has a faint acetous odour when moistened, and a sharp, cooling, saline, taste.

C. P.—It consists of one eq. of soda, one of acetic acid, and six of water of crystallization. It is unalterable in ordinary states of the air, but in dry, warm air effloresces slightly; it is soluble in three parts of water at 60°, and in somewhat less than its own weight of boiling water; it is also soluble in five times its weight of alcohol. Exposed to heat, it undergoes the watery fusion, loses all the water of crystallization at the heat of 320°, and at a heat of 600° it is decomposed.

Dose.—Gr. x.—Quantities of soda, any quantity; alcohol, multiple; sufficient to saturate the whole; evaporate the filtered liquor to the density of 1·050; crystallize by cooling, and keep the crystals in a close vessel.—As a diuretic, dose, gr. [illegible].

Tu. E.—A cold diuretic, similar in operation to acetate of potash, for which it may be substituted. It is now very rarely used.

D. & M. or Adm. ante Incorp.—Same as acetate of potash.

Terebinthina, oleum.—*Oil of turpentine* (described in the Division *Anthelmintics*), given in small doses frequently repeated, acts as a stimulant to the renal vessels, causing an increased flow of urine, to which it communicates a violet odour. It also possesses a specific action over the mucous membrane of the bladder and urethra, checking excessive discharges, and giving an increased activity to the vessels which pour out the mucus. If the use of oil of turpentine be too long continued, it is apt to produce strangury, bloody urine, and even sometimes total suppression of the secretion. The dose of oil of turpentine as a diuretic is from gtt. x to min xxx. It has occasionally proved serviceable in dropsical affections, but its stimulating property forbids its employment if there be any tendency to inflammatory action. It is frequently combined with much benefit in gleet, in leucorrhœa, and in chronic dysentery. Under the use of oil of turpentine, the quantity of bile and in the urine is much increased, owing to which it has sometimes proves very beneficial in chronic rheumatism occurring in the old and debilitated.

Terebinthina Chia, D. L. E. *Liquid resin of Pistacia terebinthus. Chian turpentine.*—This tree is a native of parts of the South of Europe, of the Grecian Archipelago, and of Syria. It belongs to the natural family *Anacardiaceæ*, and to the Linnæan class and order *Diœcia Pentandria*.

B. C.—Stem 20 to 25 feet high; leaves pinnate; young leaves rubbing [illegible] in compound racemes; fruit globular, pendent, [illegible]

P. D. & M. or Pers.—The liquid resinous excretion, which constitutes the Chian turpentine of commerce, is obtained chiefly in the island of Scio, by making incisions into the trunk of the tree, and allowing the juice which flows out to harden on large flat stones placed under the trees; when the juice is hardened it is scraped off.

P. P.—It is of the consistence of very thick honey, nearly opaque, of a pale greenish-yellow colour; has a weak terebinthinate peculiar odour, and a slightly bitter taste.

C. P.—Chian turpentine consists of volatile oil and resin, which it readily deposits by keeping, or by exposure to the air, when it becomes thick and grumous. This turpentine is very scarce, Strasburg or Venice turpentine being usually substituted for it.

Tu. E.—It resembles, in its action on the urinary organs, common turpentine; but by many it is supposed to act more efficaciously in checking chronic mucous discharges.

D. & M. or Adm.—Gr. x. to gr. xxx., three or four times a day. It may be made into pills with powdered liquorice root or crumb of bread, or it may be given in emulsion with yolk of egg or gum.

Terebinthina Cocciferæ. L.—Turpentine of [illegible] (Chian turpentine, *Liquid resin of Pistacia terebinthus*, D. L. E.) [illegible] is said to be the richest source of [illegible]

belonging to the subject. Locally Cantharis, and to the Linnæan class and order Hexandria Monogynia.

Off.—*Liquor Potassæ* (Ph. Lond.), one drop to five drops; *Tinctura Cantharidis* (Ph. Lond.), twenty drops to one drachm; *Unguentum Cantharidis* (Ph. Lond.), *Emplastrum Cantharidis* (Ph. Lond.), *Collodium Cantharidatum* (Ph. Lond.).

Ph. U. S. of Para.—The officinal cantharis, *cantharis vittata* Fabricius, is a common insect from this country which lives on the fruit, or by sucking out the juices through the rind, pass the wood, and subsisting on the juice as it exudes.

Ph. P.—When fresh it is of the consistence of honey, but it gradually concretes into a yellow, translucent, resinous-looking mass, of a peculiar agreeable, terebinthinate odour, and an acrid, rather bitterish taste.

Ph. P.—It consists of volatile oil, two resins, one soluble, the other insoluble in alcohol, extractive, and some salts. It is insoluble in water, but forms an emulsion with it by means of mucilage or yolk of egg.

Th. P.—The action of Canada turpentine on the urinary organs is similar to that of the other turpentines; it is more generally preferred for the treatment of the advanced stages of gonorrhœa, of gleet, of leucorrhœa, and of cystirrhœa, in which diseases it proves highly beneficial.

D. & M. or Ann.—Similar to the last.

Usus. *A peculiar principle contained in the urine of many animals.*

Ph. P.—In colourless, transparent crystals, long, flattened, four-sided prisms; heavier than water. They are inodorous, but have a cooling, sharp taste.

Ch. P.—It consists of C⁶H²N². It is soluble in its own weight of water at 60°, in 4 or 5 parts of cold alcohol, and in 2 parts of boiling alcohol. It is unalterable in dry air, but deliquesces in damp air; it fuses at 240°, and is decomposed at a higher temperature. It is a feeble base, neutralizing with most acids without neutralizing them.

Prep.—"By evaporating fresh human urine to the consistence of a syrup, mixing with nitric acid, washing with cold distilled water the nitrate of urea first deposited, decomposing the remainder of nitrate, dissolving the precipitated urea in alcohol, and crystallizing." By the following six-part process of Liebig, viz. or patiently concentrating, crystallized urea may be procured from the urine of persons who have taken a sufficient quantity of nitrate of potash. "Mix together intimately perfectly dry triturations of potash with 16 of oxide of manganese, and, as fast as the mixture acquires a greenish tint, add, by degrees, to a hot solution of urea. Evaporate to dryness, exhaust with alcohol, and crystallize." Or by the following process of Liebig, viz. or patiently concentrating, crystallized urea may be procured from the urine of persons who have taken a sufficient quantity of nitrate of potash. "Mix together intimately perfectly dry triturations of potash with 16 of oxide of manganese, and, as fast as the mixture acquires a greenish tint, add, by degrees, to a hot solution of urea. Evaporate to dryness, exhaust with alcohol, and crystallize." Or by the following process of Liebig, viz. or patiently concentrating, crystallized urea may be procured from the urine of persons who have taken a sufficient quantity of nitrate of potash. "Mix together intimately perfectly dry triturations of potash with 16 of oxide of manganese, and, as fast as the mixture acquires a greenish tint, add, by degrees, to a hot solution of urea. Evaporate to dryness, exhaust with alcohol, and crystallize."

Ph. U. S.—Urea is at present scarcely ever employed as a diuretic, although, from the reports of several French practitioners, it appears to promote remarkably the secretion of urine, without producing any general disturbance of the animal economy.

D. & M. or Ann.—Dr. A. to gr. ij. dissolved in sweetened distilled water. It may also be given made into pill or bolus with any soft excipient, or with sugar, or treacle.

CHAPTER IX.

EMETICS.

(Vomits.)

Emetics are substances which are used for the purpose of producing vomiting. The number of medicines employed with this intention are but few, and they are either *specific*, that is, they operate vomiting when injected into the veins, as well as when introduced into the stomach; or their operation is *topical*, producing vomiting only when taken into the stomach. Tartar emetic is an example of a *specific*, mustard of a *topical* emetic. It would be out of place here to enter into any consideration of the pathology and pathology of vomiting; it must suffice to say, that independent of the mere evacuation of the contents of the stomach, emetics in general influence sympathetically the entire system. In prescribing emetics, attention must be paid to the differences which exist in their mode of operation; some medicines of this class, as sulphate of zinc and sulphate of copper, produce their effects very quickly, exciting vomiting almost immediately after they are swallowed, without occasioning much nausea or depression. Other emetics operate more slowly, and produce great nausea, accompanied with a feeling of feebleness and exhaustion; while the vegetable emetics, as ipecacuanha and squill, require a much longer period for their operation. In selecting a particular remedy of this class, therefore, we should be always guided by the nature of the indication which is to be fulfilled. Emetics should be employed with great caution where there are symptoms of determination of blood to the cerebral organs, in consequence of the obstruction of the circulation which is occasioned during the act of vomiting; for the same reason, also, they ought not to be administered in the cases of the larger arteries, as in aneurism. From the violent action of the abdominal muscles which is excited, the act of vomiting is attended with great risk in the advanced stages of pregnancy, in hernia, and in prolapsus ani.

The act of vomiting, under the influence of what is usually called a specific or a topical emetic, does not differ in its phenomena when thus artificially excited, from the action as produced spontaneously under various morbid conditions of the stomach. It is always preceded by agitation of mind and nervous trembling of the hands, as in holding the hands by a candle, or agitating the hand by the finger. In this latter mode of producing vomiting, the forehead is supposed to act through the cerebral nerves on the [illegible] and also with much [illegible]. There are various methods of exciting the act of vomiting by external [illegible] [illegible] [illegible]

ed by the passage of blood through the lungs of the foetus or child. Neither by the intervention of the pneumogastric nerve, and that produced by the ovation, as the warm sensation upon one's pulse ceases, or by abdominal obstruction, is passed to the spinal nerves, and thus reaches the muscles. In the cases dependent on asphyxia or ovation, it is supposed that the communication is made to the diaphragm and abdominal muscles partly through the vagus nerve and partly through the splanchnic and sympathetic nerves, while the spinal cord and spinal nerves are simultaneously employed in sustaining the impression so as to produce the mechanical actions of the process. The vomiting attendant upon sea-sickness, and other similar agitations of the body, is supposed to fortify the opinion of the nervous transmission of irritation to the brain, and thence back to the muscles concerned; and this theory is deemed not inconsistent with the vomition excited by injecting specific agents into the veins, which are supposed to act through the circulation in the same way.]

ANTIMONIAL EMETICS.—*Soluble tartrate of antimony and potassium* (described in the division *Antimonials*), given in doses of gr. xxx or upward, acts as a powerful emetic, without producing much nausea or depression. It is consequently employed in cases of great debility, where the use of an emetic is indicated; as in chronic bronchitis occurring in broken-down constitutions, and in the suffocative catarrh of typhus. But, in consequence of the uncertainty of its operation, ipecacuanha is generally preferred in these cases.

ANTIMONIAL OR OTHER METALLIC EMETICS.—*Tartar emetic* (described in the division *Emphysematics*), administered in doses of one or two grains dissolved in water, operates as a powerful emetic, producing at the same time general depression and much nausea. The act of vomiting does not occur for from twenty minutes to half an hour after a dose has been taken, but it is then usually energetic, and frequently repeated. The emetic action of tartar emetic is *specific*, as it operates not only when introduced into the stomach or rectum, but when injected into the veins, or otherwise introduced into the circulating system. It is employed as an emetic in all cases in which we wish to produce a powerful impression on the system, and, at the same time, lower the circulation; as in the early stages of fevers or inflammatory diseases, when, if given at the very commencement of the symptoms, the disease is frequently cut short; whether acute it is employed in common continued fevers, in acute exanthemata, as croup, in hooping-cough, in severe hemoptysis, in pulmonary, &c. In cases of threatened suffocation from the lodgment of solid bodies in the œsophagus, tartar emetic has been successfully employed, from the power it produces vomiting, and the readiness of the substance to cause its passage, if it is inclosed in other materials at the time, in consequence of the slowness of its operation and its depressing effects. It is best administered in divided doses; as it may be dissolved in half a pint of water, and of this the whole or

administered every ten minutes until vomiting is produced. It is sometimes given in the form of enema; for this purpose [illegible] to be dissolved in 3ij of tepid water; in this form, however, its operation is uncertain. For injection into the veins, gr. j or gr. ij are dissolved in fʒij of tepid distilled water.

Cuprum sulphas.—*Sulphate of Copper* (described in the division *Astringents*), in doses of from gr. ss to gr. xv, operates as a speedy and powerful emetic, producing generally a single free copious evacuation of the contents of the stomach, without causing any depression of the system. It is often applicable to cases of poisoning, but as it is apt to act as a powerful corrosive, it should not be employed if it for that purpose; for the same reason, it should be given in the full doses above mentioned.

Ipecacuanha, L. U. Cephaelis ipecacuanha, radix, U. S. *Ipecacuan. Root of Cephaëlis Ipecacuanha.*—A shrub of Brazil, belonging to the natural family *Cinchonaceæ*, and to the Linnæan class and order *Pentandria Monogynia*.

B. U.—Root perennial, generally simple; stem shrubby, ascending, [illegible] long, more or less opposite, ovate-lanceolate, with a pair of stipules in the axil of the leaves; flowers white, in terminal, peduncled heads; fruit [illegible].

P. U. S. M. et Pers.—The roots, from which the epidermis or all the cortical part has been removed, dried in the sun, and packed in bundles of various size.

P. P.—Ipecacuanha root is in pieces from three to six inches long, about the thickness of a writing pen, irregularly twisted and knotted, presenting many circular depressions at short intervals, which give the root an annulated appearance, resembling a number of rings placed side by side on a common axis. It breaks with a short, clean fracture, presenting an outer cortical portion of a greyish-brown colour, and a white woody centre [illegible]. It is readily reduced to powder, which is of a pale brownish-yellow colour, has a faint, nauseous, peculiar odour, and a bitterish, somewhat acrid taste.

C. P.—The cortical portion of the root is the most active; according to the analysis of Pelletier, it contains 14 per cent. of a peculiar principle named *emetina*, and to which the active properties of the drug reside, 2 of a fat oily matter, 6 of wax, 12 of gum, 42 of starch, and 20 of ligneous fibre. Emetina is prepared by exhausting 1 part of an alcoholic extract of ipecacuanha in 10 parts of water, filtering to remove the fatty matter, and adding 1 part of subacetate of magnesia; evaporating with a gentle heat to dryness, purifying by washing with cold water, drying, and pulverizing; again exhausting the powder with boiling alcohol, distilling off the spirit, precipitating the dry residue with weak sulphuric acid and [illegible] finally, precipitating the emetina with ammonia. [illegible] is thus obtained in a white, pulverulent state, but it is generally met with in a dark, pulverulent, amorphous form, [illegible] soluble in water and [illegible] soluble in alcohol; [illegible] readily soluble in water and in alcohol, [illegible] is insoluble in water and [illegible] soluble in alcohol. [illegible] is soluble in water and in alcohol.

Adulterations.—Powdered ipecacuanha roots are frequently adulterated, especially on the Continent, by the cheaper roots, but as some of them possess the peculiar characters of the latter, as given above, the fraud is readily detected. The powder is generally supposed to be undiminished, but of this we can only judge by its emetical activity.

Uses.—In full medicinal doses, ipecacuanha operates as a powerful but mild emetic, at the same time increasing considerably the secretions. It resembles senega exactly in the time which it takes after it has been taken before its effects are produced, and also in the aid of vomiting being repeated several times; and it differs from that substance in not causing so much nausea or general depression; it has less tendency to act on the bowels. As an emetic, ipecacuanha is adapted for children, for the old and debilitated, or for delicate females, where we wish to produce vomiting without depressing the vital powers; and also for cases where the object is to increase the secretions of the pulmonary organs. Thus, it is used with benefit in the gastric febrile disorders of children, to evacuate the contents of the stomach; at the approach of the paroxysm in ague, hysteria, or hooping-cough, when it frequently checks the development of the fit; and it is generally given in conjunction with bland diluents, in the febrile and inflammatory disorders in which that substance is employed. As an emetic, ipecacuanha is to be preferred to tartar emetic, where there is any tendency to irritation or inflammation of the digestive organs; it is inferior to the sensible sulphates in cases of poisoning, on account of the slowness of its operation.

Dose.—In powder, as an emetic, for usual dose is from gr. xij. to gr. xx.; but gr. v. or gr. xj. frequently are sufficient; it is best given mixed with warm water, and its action promoted by tepid drinks; gr. j. is usually sufficient to act as an emetic for an infant. In combination with tartar emetic gr. xl. are mixed with gr. j. of that substance.—Vinum Ipecacuanhæ, D. L. E. (Ipecacuanha root, bruised (in moderately fine powder, E.), ℥j. Quæ. L. E.; sherry, ℥x (sufficient, E.), (O.), L. E.); measure for measure (O., E.) (q.s. add thus.) As an emetic, very generally employed for children, in doses of from mx. to ℈ss.; seldom for adults; dose, ℥ij to ℥iss.—Tinctura Ipecacuanhæ, E. (Ipecacuanha, in coarse powder, ℥ss.; rectified spirit, O.; proof spirit and water, of each, ℥xx.; alcohol, O.), digest the ipecacuanha in ℥ij. of the rectified spirit at a gentle heat for 24 hours; strain, squeeze the residue, and filter. Repeat this process with the residue and proof spirit, and again with the water, unite the fluids and distill off the spirit; lift the residuum contains in ℥xxij. Add to the residuum ℥vi. of the rectified spirit, and then the syrup.] This syrup is an elegantly and readily made simply prepared by dissolving an elaborate extract of the root in distilled water, and adding sugar. It is an excellent preparation for children, about two of the fluid teaspoonfuls are equal to an average dose of ipecacuanha; the dose is from ℥ss. to ℥j.; for children, mxx. to ℥ss.

Incomp.—The salts of lead and of mercury, and [illegible] table infusions.

[Sanguinaria Canadensis. *Blood-root.* U. S.—The [illegible] leaves, belonging to the natural family *Papaveraceæ*, and to the [illegible] in class and order *Polyandria Monogynia*.

P. P.—Powder of the root brownish-red; has a [illegible] odour; called bloodroot from the reddish colour of its juice.

C. P.—It yields its virtues to water and alcohol, and contains a peculiar alkaloid called *Sanguinarina*.

Th. E.—It is an acrid, narcotic, and stimulant emetic [illegible] however, in its effects, though favourably estimated by most American physicians. As an alterative and expectorant it is given in small doses, in catarrhal and bronchial affections, and in [illegible]. It is commonly combined with [illegible] or scilla.

D. & M. *or* Ann.—As an emetic, the dose is 10 to 20 grs. The preferable form is that of tincture.—*Tinctura Sanguinariæ*. U. S. P. Take of bloodroot, bruised, 4 oz.; diluted alcohol 2 pints; macerate for 14 days, express, and filter through paper. Dose, as an alterative or expectorant, 20 or 30 drops; as an emetic, 1 or 2 drachms.]

Scilla.—*Squill* (described in the division *Diuretics*), [illegible] and does, generally produces nausea and vomiting; [illegible] however, is uncertain, and therefore it is not much used [illegible] emetic. It is sometimes given to children with this [illegible] hooping-cough, and in the advanced stages of bronchitis [illegible]. In consequence of its stimulating effects, it is inadmissible [illegible] there is any tendency to inflammation. The preparation [illegible] usually employed as an emetic is the following:—*Oxymel Scillæ*. L. *Syrupus Scillæ*. E. ("Honey, depurated, *by weight* [illegible] vinegar of squill, *by measure*, 5ij (Oss. L.); boil each a little, in a glass vessel, to the consistence of syrup." L. L. "Squill vinegar, Oxij; pure sugar in powder, lxxij; dissolve with a gentle heat of a gentle heat, and agitation." E.) Dose, as an emetic, for [illegible] dren, to every quarter of an hour until vomiting is produced.

[U. S. P.—*Syrup. Scillæ compositus* (Hive Syrup). Take of squill and senega, each, 4 oz., bruised; tartrate of antimony and potassa, 15 grs.; water, 4 pints; sugar, 3½ pounds.

Pour the water upon the squill and senega, and, having [illegible] one half, strain, and add the sugar; then evaporate to 3 pints, while the syrup is still hot, dissolve in it the tartrate of antimony and potassa.

Another method:

Take of squill and senega, both in coarse powder, each, 1 ounce; tartrate of antimony and potassa, 15 grs.; alcohol, half a pint; water, 4 pints; sugar, 3½ pounds.

Mix the powders with 3½ pints of water, and [illegible] for 24 hours. Express [illegible]

powder for dispensation, and add as much water as may be necessary to make the diluted liquor amount to three pints. Boil the liquor for a few minutes, evaporate to one half, and strain; then add the sugar, and evaporate until the resulting syrup measures 2 pints. Lastly, dissolve the tartrate of antimony and potassa in the syrup while it is still hot.]

Synopsis. L. Seeds. E. Seeds. *Species nobis.* D. *Flour of the seeds of Sinapis nigra.* B. 1. F.—*Partially freed with that of Sinapis alba, and deprived of fixed oil by expression.* E. *Flour of mustard; Mustard.*—Indigenous plants, belonging to the natural family *Cruciferæ*, and to the Linnæan class and order *Tetradynamia Siliquosa.*

B. C.—*Leaves*, when young, [are] more [or] less [hairy]; *stems* rather [and with a very short hair, quadrangular; seeds dark-brown. The white mustard is distinguished by the pod having a long beak, and by the seeds being yellow.

P. P.—Although the Dublin and London Pharmacopœias direct flour of mustard to be procured from the black variety only, yields yellowish, or mixed with the sharps, and which is always used in medical practice, is prepared from both varieties in equal or nearly equal proportions and ground. Mustard is a greenish yellow powder, having an oily aspect, an acrid, burning taste, and in the dry state, a faint, nauseous smell; but when moistened it emits a strong, pungent odour, very irritating to the eyes and nostrils. Black mustard is much more pungent than white.

C. P.—Black mustard seeds consist of a bland fixed oil, of a peculiar acrid, bitter, odourless, uncrystallizable, which has been named *myronic acid*, of another peculiar principle resembling vegetable albumen and emulsin, which has been named *myrosyne*; and of a third peculiar principle, crystallizable and very volatile, named *sinapoïn*; with other unimportant matters. When water is added to mustard, by the mutual action of these principles a pungent volatile oil is formed, and may be obtained by distillation, but this oil does not preexist in the seeds; and it is on its formation that the active properties of mustard are due.

Adulterations.—Flour of mustard is always more or less adulterated with a variety of substances. Wheaten flour, which is generally (always, according to Christison) mixed with it, may be detected by tincture of iodine turning a violet-blue colour. Of any other adulterations, we can only judge by the physical properties of the specimens.

T. E.—Mustard is a powerful stimulating emetic, and should be preferred to any other remedy of the class, when the sensibility of the stomach is greatly reduced, or vital power is low. This is accompanied with much advantage in narcotic poisoning, in intermittent diseases, apoplexy, in malignant cholera, in some forms of jaundice, and of paralysis, and in obstinate catarrh (especially in the aged or debilitated).

T. E. M. *or Admin.*—To an emetic mustard is given in doses of

ss. to ʒ.; it is best administered mixed with [illegible] water.

VIOLA ODORATA.—The root of this plant (which has been ranked in the division *Cathartici*), though but efficient in the British Pharmacopœia, possesses well-marked emetic properties, which depend on the presence of an alkaloid named [illegible] and appears precisely similar to emetina, and has been found in the fresh roots of all the species of the genus viola. In their action on the system, violet roots resemble ipecacuanha, for which they would form an excellent substitute; and as many of the species are indigenous, the subject is worthy of more attention than has hitherto been bestowed on it. The dose of the powdered root is from 5ss. to ʒi.

ZINCI SULPHAS.—*Sulphate of Zinc* (described in the [illegible] *transgressi*), in full medicinal doses from gr. xx. to gr. xxx., operates as a speedy, safe, and efficacious emetic, not producing much nausea or depression. It is therefore preferred to all other emetics of this class in cases of poisoning. It is also applicable to many cases in which we wish to produce a single but complete evacuation of the contents of the stomach. As an emetic, sulphate of zinc is best administered in the full doses above stated, dissolved in from four ounces of tepid water.

CHAPTER X.

EMMENAGOGUES.

EMMENAGOGUES are medicines which are supposed to be capable of promoting the menstrual discharge. That any substance has a direct or specific power over the uterine organs has been doubted by many, in consequence of the uncertainty of the operation of the so-called specific emmenagogues, and also as the uterus is not an organ intended for the elimination of foreign matter. But there are a few medicines which are employed to promote the menstrual secretion, and which appear to act solely as stimulants to the uterus, and these alone will be considered in this chapter. Suppression or absence of the menstrual discharge generally is the effect of a debilitated state of the system, and therefore the remedies which are to be employed must have reference to that morbid state. Thus, when amenorrhœa is the consequence of general debility, we must have recourse to tonics and stimulants; and when it occurs in a state of plethora, venesection and other debilitating plans of treatment are to be employed. Substances which stimulate powerfully the [illegible] organs act [illegible] on the general system, and [illegible] thereby [illegible] the menstrual [illegible]

These some of the more useful substances, as elder, black hellebore, pennyroyal, &c.; and the stimulating aromatics, as the Cayenne capsicums, &c., are frequently also used certain consumptives.

CROCUS, L. S. *Crocus sativus*, STORACES, D. *The Stigmata of Crocus sativus*; *Saffron*.—A native of Asia Minor, now naturalized in England, belonging to the natural family *Irideæ*, and to the Linnæan class and order *Triandria Monogynia*.

[illegible]

P. P.—Saffron. *Hay saffron*, consists of the dried stigmata in loosely aggregated masses; the colour is deep orange, the odour powerful, and agreeably aromatic, in large quantities stupifying; the taste is pungent, aromatic, and somewhat bitter. It is imported from Spain and France, English saffron being never met with in the market at present. According to Pereira, "one pound of good commercial saffron contains the stigmata and styles of nine thousand flowers, 4200 flowers are required to yield one ounce of saffron."

C. P.—Rolling masses of albumen, mucilage, a colouring or tinctorial matter termed *polychroite*, and which constitutes 2-3ds of its weight, volatile oil, &c. It readily yields its properties to water and to alcohol, its solution in either being of a deep orange colour.

Adulterations.—In consequence of the high price of saffron, it is very much adulterated; the petals of the Carthamus tinctorius, of the Calendula arvensis, pomegranate blossoms, and those of safflower and turmeric are used for this purpose. The flowers may be detected by the difference of their structure, when a specimen is soaked in water; the leaves of wool, by the odour which they emit on being burnt. What is at present sometimes sold in England for cake saffron, consists of the petals of the Carthamus tinctorius made into a cake with gum-water. Of the qualities of saffron we judge by its sensible properties.

Use.—Saffron is a stimulant of weak power, exciting a rise of the pulse, by an action well marked, over the circulating organs; hence it is generally said to be cardiographic. In the present day it is scarcely ever employed as medicine, except to give colour and odour to ointments. In the Continent it bears a high character as a remedy for the severer nervous pains which so frequently precede or accompany menstruation.

It is [illegible]

the bowels, and add the sugar to it.) Dose, [illegible] used for its [illegible]ance.—*Tinctura Cinnamomi* L. [illegible] one. P. L. proof spirit, Oj.; prepared like [illegible] either by percolation or digestion, the former method being more convenient and expeditious.) Dose, fʒi. or fʒij.

Ergota, L. E. [and U. S. P.]. *Ergota clavus* L. *A [illegible] matured fungus with degenerated seed of Secale cereale* E. *Ergot of rye.*—Much difference of opinion exists as to what this [illegible] really is; the latest and best authorities agree that it is a [illegible] species of fungus (*Sphacelia Clavus* of Fries and Leveillé; *Ergotella abortifaciens* of Quekett and Pereira), which is produced under certain circumstances, as yet not fully ascertained, [illegible] belonging to the natural families *Graminaceæ*, *Cyperaceæ*, and *Juncaceæ*, but on none so frequently as on the *Secale Cereale* or common rye.

P. P.—Ergot, or spurred rye, consists of angular [illegible] round bodies, from the third of an inch to an inch and a half in length, retaining the longitudinal depression of the seed at its base at the extremities, curved like the spur of a cock, whence its name. It is of a violet-brown colour externally, somewhat ash; yellowish internally. In the entire state, the odour is [illegible] faint, but when powdered it has a heavy, mawkish, [illegible] and smell; the taste is acrid and disagreeable; it is [illegible] gible, breaking with a clear transverse fracture. It attracts [illegible] ure if exposed to the air, swells, and becomes mouldy, and [illegible] tacked by a small insect, a species of *acarus*, which devours [illegible] material and leaves the grain a mere husk, no longer to be [illegible] purposes; ergot of rye should therefore be kept in well-[illegible] bottles.

C. P.—According to the latest and best analyses [illegible] by Wright, ergot consists of 31 per cent. of a thick white [illegible] consistence, 9 of mucilage, 7 of gluten, 11·40 of [illegible], 2·20 of [illegible] ering matter, 26 of [illegible], and 3·10 of salts. The [illegible] which the active properties of the drug depend, is of a [illegible] brown colour, lighter than water, and soluble in alcohol and [illegible] lutions of the caustic alkalies; it is readily procured by [illegible] ting with a gentle heat an ethereal tincture of the [illegible] by percolation. Ergot of rye yields its virtues to water, [illegible] ether, and the volatile oils; of these, water is by [illegible] the best menstruum.

Adulterations.—Plaster of Paris, and other [illegible] powders, are sometimes fraudulently used as substitutes for, or mixed with, ergot of rye; [illegible] fraud of detection. We should recommend, [illegible] solution of acetate of lead as given by Wright. [illegible] and powdery, of a [illegible] yellow, [illegible] a pink shade [illegible]

Ruta graveolens, D. *Rue of Rhône* [illegible]
—A native of the South of *Europe*, belonging to the natural order *Rutaceæ*, and to the Linnæan class and order *Decandria Monogynia*.

F. P.—[illegible]

F. P.—Madder root is imported from the Levant in [illegible] cylindrical pieces, about the thickness of a goose-quill, [illegible] dish-brown externally, reddish-yellow internally. It has a [illegible] unpleasant odour, and a bitter, austere taste.

U. P.—There are no less than five colouring matters in madder, namely, purple, yellow, red, orange, and brown; consequently it is much employed in the arts for dyeing. The [illegible] properties must depend on a small quantity of lime [illegible] contains. It imparts its colour and taste to water, alcohol and [illegible]

T. P.—Madder has fallen into complete disuse as a medicine, so that it has been expunged from the last edition of the London *Pharmacopœias*. Taken internally for any length of time, the urinous secretions, and even the substance of the bones, are coloured red. It was highly esteemed by Dr. Hosack as an emmenagogue; the dose of it is from 3ss. to 3j., three or four times [illegible]

Ruta graveolens.—Rue (described in the previous [illegible]) was formerly highly esteemed as an emmenagogue, and at present is a popular remedy as such; it is sometimes employed for the purpose of procuring abortion. Although it undoubtedly possesses a direct stimulating influence on the uterine organs, it is scarcely ever employed in regular practice in the present day for any of the purposes for which the class of remedies [illegible] formerly used.

Sabina, L. P. Juniperus sabina, foliis, D. *Savine* [illegible] —*tops both fresh and dried*, L.) *of Juniperus sabina*. [illegible] native of the South of Europe, cultivated in England [illegible] to the natural family *Coniferæ*, and to the Linnæan class and order *Dioecia Monadelphia*.

T. P.—[illegible]

T. P.—As met with in the shops, [illegible] the [illegible] and their attached leaves; in the fresh state they [illegible] bright green colour, have a heavy, peculiar, [illegible] and a bitter, [illegible] taste. When dry they retain a [illegible] green, and their odour soon weakens.

C. P.—Savin [illegible] [illegible] [illegible]

colchicum be taken and taste is wanted to alcohol: the alcoholic tincture is of a bright-green colour.

The Essence is a powerful stimulant to the uterine organs, and is employed as an emmenagogue with much benefit in amenorrhœa and chlorosis, depending on torpor or deficient action of the uterine system. In consequence, however, of its poisonous properties, it should be used with caution; its employment is contraindicated where there is the least tendency to irritation or inflammation of the uterus or any of the pelvic viscera. Savin is the drug usually resorted to by the vulgar for the purpose of producing abortion, but it cannot effect this, except at the risk of the life of the mother.

U. & M. of Adm.—In powder, a bed form, the dose is from gr. v. to gr. xv. The dose of the oil is from min. ij. to min. vj.—*Infusum Sabinæ*. (Fresh savin tops, ʒj.; boiling water, fʒviij.; macerate for one hour in a covered vessel.) Dose, fʒss. to fʒj.

In cases of poisoning with savin, emetics should be first employed to remove the poison from the stomach; and afterward opiates and demulcents, to be followed by general antiphlogistic treatment.

CHAPTER XI.

EMOLLIENTS.

(Demulcents—Saccharata.)

Emollients may be defined substances which diminish the vital tone or cohesion of the solid tissues of the body, and thereby render them more lax and flexible; or which, by diminishing sensibility, protect the sensible surface of the body from the action of acrid matter. This division of medicinal agents has been stated by many to act merely mechanically, by lubricating and softening the parts to which they are applied, or by sheathing them from the action of matters which are capable of irritating them. But this explanation cannot possibly apply to those substances which, when introduced into the stomach, operate on remote parts of the body; Emollients, therefore, seem to act either directly on the part to which they are applied, or indirectly through the medium of the circulation. They are principally employed in the treatment of inflammations, either general or local, in painful ulcerations, in diseases of the urinary organs, and in poisoning with acrid substances; but in all these cases they are only used to alleviate symptoms. Of the non-animalized substances employed as emollients, mere water is the most important, and the higher the temperature at which it can be applied without the actual production of pain, the greater will be its emollient powers; for this reason, in the form of vapour, it will be found productive of more advantage

Axunge porcina, D. Axunge, L. Axonge, F. *Fat of hog's lard, Axunge*—Yet scarcely the common lard, but that obtained from *Mammalia*, order *Pachydermata*. The fat is usually taken from about the brain, from the mesentery and entrails, that is very melted and strained, to separate the membranes.

P. C.—Soft as well as ground fat, usually consumed, with some heat, and as a portion of other ingredients, in ointments, as directed in the several pharmacopœias, the following formula is given in the *Dublin Pharmacopœia*. Hogs' lard, one pound. Mutton suet, one ounce. Melt them, and, when cold, add of olive oil a fluidounce. Strain them, the lard, prepared by these rules will be soft, white, and free from smell, to be kept in bottles with wide mouths for the use of those who prefer the ointment thus to make, but the lard sometimes alone is used.

P. P.—Axunge is a white, solid, fatty matter, with a pale yellow colour, and a mild, sweetish taste.

C. P.—It is composed of 85 per cent. of elaine and margarine and 15 of stein or stearine. It melts at about 92° F. into a transparent liquid, which, if water be present, is whiter or more opaque in the air. Axunge undergoes a process of decay, or rancidity, when it acquires a peculiar unpleasant odour and taste; unless in this state it is unfit for medical purposes.

Th. E.—Axunge is not used as medicine internally; but acts on the body as nutritive and emollient. As an external agent, it is employed as a base for ointments, cerates, and liniments.

Adeps ovillus, D. *Suet*, L. F. *Fat of Ovis aries*, Linn. *Mutton suet*.—*Ovis aries*, the sheep, belongs to the class *Mammalia*, and order *Ruminantia*. The fat is selected from the kidney-bed of the kidneys, melted and strained, to separate the membranes. Mutton suet is nearly similar in physical and chemical properties to axunge, and is employed for the same purposes; it sometimes produced to axunge, in consequence of its greater consistence and higher melting point.—*Adeps ovillus prep.* It is prepared in the same way as prepared hog's lard.

Althæa officinalis, roots of marsh, D. L. E. *The herb-root of Althæa officinalis, Common Marshmallow*—An indigenous plant, belonging to the natural family *Malvaceæ*, and to the Linnæan class and order *Monadelphia Polyandria*.

P. C.—From two to three feet high, downy, leaves ovate-lanceolate, crenulate and sub-pubescent, flowers in axillary stalks large, pale rose-colour.

P. P.—The roots are fusiform, from 12 to 18 inches long, about the thickness of the finger, yellowish externally, white and tough within; the odour is faintly nauseous, the taste sweetish and very mucilaginous. The leaves have a weaker odour, and a less mucilaginous taste.

C. P.—The roots consist of gum, uncrystallizable sugar, starch, yellow colouring matter, asparagine, albumen, &c. It yields a considerable quantity of ash.

Th. E.—Marshmallow root is one of the most extensively used demulcents in the Edinburgh, but is not much used in the [illegible]. It is given in the form of decoction, infusion, and syrup.

more nutritious, as the generous, crystals, soybean, lemonade, &c., rather than as a vehicle for other medicines. Externally, the leaves are generally employed in the same plaisteries, in the form of decoction or cataplasm.

D. & M. or Jour.—*Decoction Althæa*, D. *Mixture Althæa*, E. [Dried root (and herb, D.) of *Althæa officinalis*, cut, bruised, and of the seeds, by a boiling water, by measure, avoir. (Dub., E.) 3ss. boiled to 3vi. (Lap., E.); strain through linen or calico; and when the decoction has subsided, pour off the clear liquor for use.] Dose, fʒi. to fʒii. frequently repeated.—*Syrupus Althæa*, D. L. E. [Root of *Althæa officinalis*, bruised (sliced, E.), 3ss. (Dub., L. E.); pure sugar, lbj. (Dub., L. E.); water, by measure, fʒx. (Dub., L. E.); boil the water with the root down to one half (strain through calico, L.), and dissolve the sugar in the liquor; set aside for 24 hours, that the dregs may subside; pour off the clear liquor, add the sugar, and boil down to a proper consistence.] This syrup does not keep well. The dose is from fʒss. to fʒj.

Unites—Iodine, and tincture of the muriate of iron.

ALMOND. ALMOND. *Amygdalus communis*, D. L. E. [and U. S. P.] *Barrels of the two varieties of Amygdalus communis*, *Bitter almonds*; *and Sweet almonds*.—The almond-tree is a native of Syria and Barbary, but grows freely throughout the South of Europe; it belongs to the natural family *Rosaceæ*, and to the Linnæan class and order *Icosandria Monogynia*.

Fig. C.—A small twig, with accessories, showing leaves, blossoms, fruits, &c. (peculiar to the bitter almond variety, as the leaves of the sweet almond flower before opening before the leaves, while in consequence of from succeeding, nearly marked with a longitudinal furrow, where it opens when ripe, containing a hard, rough shell (putamen), lined with pith or farinose, within which is the seed or kernel.

U. S. P.—Sweet almonds vary in size, from half an inch to above an inch in length, and are about three eighths of an inch in breadth; they are oblong, compressed, and pointed at one end; the exposure or colour covering is reddish brown, covered with a yellowish dust; the parenchyma or cotyledons is white, hard, and oleaginous, inodorous, having a sweet, bland taste. Bitter almonds are generally smaller; they are characterized by their bitter taste and peculiar odour when rubbed with water. Several sorts of sweet almonds are met with in commerce; the principal of these are Jordan and Valencia almonds; the former come from Malaga, and are the best obtainable; they are longer and more pointed than the latter, which are brought from Valentia. Bitter almonds are imported from Mogadore.

C. P.—Sweet almonds consist of fixed oil, emulsin, liquid sugar, gum, &c. In addition to these, the bitter almond contains a peculiar principle named amygdalin, which, when brought in contact with water, from a mutual reaction between it and the emulsin, produces an essential oil, which will be more particularly noticed under the head of Cyanides.] The fixed oil, Oleum Amygdalæ, is [a mixture of the Elaeic Modes in]

pens; the Greek directs it "to be prepared like the foregoing, that is, with sugar, in a mortar, and expressing without heat." For this purpose either sweet or bitter almonds may be employed; the latter, as being cheaper, are generally used. A ton of almonds yields from 45 to 52 lbs. of oil. It is a limpid pale yellow, inodorous, bland liquid oil; lighter than water, its density being about 920; it congeals at 70 per cent. of *nitric*, and 24 of *sulphuric* at 1·845 in equal parts of boiling, or 25 of cold alcohol for its solution; but is perfectly soluble in ether.

Ts. E.—Sweet almonds are nutritive and emollient; they should be blanched, deprived of the husk or pellicle, before being used, as from its acridity it has been known to produce nausea and vomiting, heat of the stomach and bowels, in some instances followed by an eruption on the skin. In medicine, the preparations of the sweet almond are used as emollients, chiefly in inflammation of the genito-urinary mucous membrane, to lessen the acrimony of the urine, and with the same intention in calculous affections. The oil is seldom given internally; according to some, it possesses slightly laxative properties; externally it is used for frictions, and as an ingredient in some soaps.

D. & M. or Ann.—*Confectio* (Converse E.) Amygdalarum [3ij], L. E. (Sweet almonds, [ij]); powdered gum-arabic, [ij]; powdered sugar, [iv.]; blanch the almonds, and beat them with the gum and sugar into a uniform pulpy mass. "This confection may be easily kept unchanged if the almonds, gum, and sugar, when finely powdered, are afterward mixed; then, whenever the confection is to be used, beat all the ingredients together until they are thoroughly incorporated." L.) This confection is only used for the preparation of the emulsion.—*Mistura Amygdalarum*, D. Oleaginous [pure] almonds, [ss.]; bitter almonds, [i].; pure sugar, [ss.]; water, [iiss.]; rub the almonds with the sugar, adding the water gradually, and strain. (Almond confection, [iij.]; water (distilled, L.), [v. (Oj), F.]; add the water to the confection gradually, triturating until they are mixed, and strain through linen. Or it may be prepared as follows, E.: Sweet almonds, [ij.]; pure sugar, [v.]; mucilage, [ss.]; water, [iij.]. Gently beat the almonds well then to a smooth pulp in an earthenware mortar, first rubbing the sugar, then with the mucilage; add the water gradually, constantly stirring, and strain through linen or calico.) Emulsions are employed as a vehicle for other medicines, or forms of [illegible]; as the few bitter almonds in the Dublin preparation give it an agreeable flavour. Acids and alcohol, and, of course, [illegible] incompatible with almond emulsion.

Anise, D. L. E. *Fruit of the seed of Pimpinella Anisum*, D. L.—*of Trifolium vulgare*, E. *March*.) Woodv. [illegible] The common anise, *Pimpinella Anisum*, is a native of the [illegible] the Levant, and is cultivated throughout all Europe. It [illegible] in the natural family Umbelliferæ, and in the Linnæan class and order Pentandria Digynia.

O. Starch from wheat, potatoes, almond, bitter almonds, beans, maize, or a glucoside called arum, arrow-grass, or the rhizome of the iris, and from various other materials, with a magnifying power.

P. In all its Forms.—The powder of starch (generally 30 grammes) of whatever form it is required to be used, is first to be rubbed down with a small quantity of cold water, and a measured quantity of water, varying with the purpose for which the starch is to be used, is then added, stirring the mixture with a pestle the whole time it is being made, and finally, straining the dispersed starch, and applying it as a mucilage.

C. P.—*Starch* usually occurs in the form of small, irregular, hexagonal grains; it is white, pulverulent, unalterable in the air, smoothing under the fingers when highly pressed, odourless, and insipid. Viewed under the microscope, it is found to consist of various-sized transparent particles, rounded or angular, uneven on the surface.

C. P.—*Starch* is composed of an external tegument termed *Amylin*, and a contained mucilage named *Amylon*. Its ultimate analysis is $C_{12}H_{10}O_{10}$. *Starch* is insoluble in cold water, but may be suspended in it by trituration; it is also insoluble in alcohol and ether. In water near the boiling point it dissolves almost completely, and if sufficiently concentrated, forms with it an opaque jelly, which becomes more consistent as it cools. *By roasting starch*, it is rendered somewhat analogous to gum, and is then soluble in cold water. With a cooled decoction of starch, iodine forms a rich blue compound (*iodide of starch*), which exists in the intensity of the colour, as the iodine or starch predominates. It is only on the amylin that iodine acts, not altering the colour of the amylon, consequently it produces an effect on starch when merely moistened with water, requiring either trituration or heat to burst the tegumentary membrane. Amylin constitutes 996 or 998 thousandths of starch, amylon only 4 or 2 parts in a thousand.

Adulterations.—Starch is often adulterated with sulphate of lime; it may be detected by incineration, the starch burning away and leaving the lime sulphate. *Its weight* is often increased by the presence of superabundant moisture, which may be discovered by drying starch in a vapour-bath, and ascertaining the loss of weight, which should not be more than six or twelve per cent.

U. P.—*Whenever starch* is employed in medicine, chiefly in the form of decoction, as an excellent vehicle in dysentery, diarrhœa, or other inflammatory affections of the abdominal viscera; it is also used as a vehicle for more active remedies, and for suspending drugs which are administered in the state of powder. *Externally*, starch in fine powder is applied to excoriated parts, and for preventing the formation of bed sores.

D. & M. or Aqua.—*Mucilago* (*Mucilage*, L.) *Amyli*, D. L. E. (*Starch*, Ph. Dub., L. E.) ; *water*, by measure, ℥j. (Oz. I. M.) ; *triturate the starch with the water gradually added, and boil for a short time.*]

Avena, L. E. Avena, oatmeal, farina or semolina. D. *The seeds (freed from the husks, L.) of Avena sativa*, L. E. *Oatmeal*, D.—*Oats* (*oat*, the common oat, is generally cultivated throughout the whole of Europe; it belongs to the natural family *Gramineæ* or *grasses*, and to the *Triandria Digynia*

[illegible]

C. P.—Only consist of 68 per cent. of meal, but it [illegible] book of *Brose*. The dried meal consists of starch, [illegible] albumen, and lignose, but no gluten. Oatmeal or groats [illegible] water, in the proportion of about 3½ to 6½ of water, forms in half crystalline *gruel*, a light article of diet for invalids or [illegible]. If a larger proportion of the coarsely-ground [illegible] used, and moistened, it is called *parritch*, a principal article [illegible] the diseases of hospitals and charitable institutions, and forming [illegible] article of food in Scotland and the north of Ireland.

T. L.—Oatmeal is nutritive and excellent. It is [illegible] is taken internally, in the form of *gruel*, thrice each day. [illegible] remedy it is sometimes used in the form of poultice; [illegible] *parritch*, but with less boiling; it enters into the composition of the *Cataplasma simplex*, B. (See page 189.)

Cera, L. Cera flava, B. E. *A substance prepared by the bees, Mellifica, L. Waxy secretion of Apis Mellifica, T.* Beeswax.

Cera alba, B. L. E. *White wax; Bleached beeswax.* Wax is a product of many vegetables, but that was employed in pharmacy is a secretion of certain glands near pockets situated on the abdomen of the common bee; it is used by the insect in constructing the cells of the honeycomb.

P. P.—*Yellow wax* is in large cakes, of the shape of the vessel in which it has been allowed to cool; it has a greenish-yellow colour, a dull lustre, a peculiar sweet odour, and a hard, [illegible] sp. gr. 960 to 965. *White wax* is in white cakes, with a [illegible] yellow tinge; it is easily translucent, unctuous, and fragile; sp. gr., about 960.

C. P.—White wax consists of two substances, *cerine* and *myricine* (*Lewy*); its ultimate analysis is $C^{40}H^{40}O$ (*Henry*). It [illegible] 66 in water, and in alcohol and ether when cold; but [illegible] boiling alcohol and ether, as the latter [illegible] it forms a "wax", and is inflammable, burning without [illegible] when pure. It combines with oils and resins when [illegible] them.

Adulterations.—Wax is sophisticated with [illegible] be detected by the action of [illegible] which [illegible] has been boiled with resin, which may [illegible] by alcohol; with fat or grease, which [illegible]

burned) and with form of sulphur and silver overlay or metallic appearance which is not left when wax is dissolved by oil of turpentine.

TH. E.—Wax acts as an emollient, and was formerly employed as such in ointments of the cataplasms, but at present it is not used as an internal remedy. As an external agent, it forms the basis of all cerates, and is an important constituent of many ointments and plasters.

Preparations.—*Ceratum Cetacei*, D. (White wax, 24; prepared lard, 3; white soap, 24; spermaceti, 3.)—*Ceratum*, L. *Cerate simple*, U. (Yellow wax, 12 parts; E. (White wax, 10; lard, 10; spermaceti, 4 parts; E. (White wax, 10; lard, 10; spermaceti, 4 parts; oil of almonds, 4 parts; white wax, 1 part.) Obs. "Melt the oil gently, add the wax and spermaceti, stir the whole briskly when it is cool, and continue the agitation till it is cold." U.) These preparations commonly known as simple cerate are used as bases and vehicles.—*Ungentum Cetacei*, D. (Prepared in the same manner as white wax ointment, substituting yellow wax.)—*Ungentum Cetæ*, L. (Spermaceti cerate, L. (Wax, 1 oz.; oil, 4 fl. oz.; rose water, 2 fl. oz.; mix by the heat of a water bath, and stir briskly till cold.)—*Cerate, Spermaceti*, U. "Melt with a gentle heat, and stir briskly till cold." U.) Chiefly used for preparing cooling lip salves.—*Unguentum simplex*, E. (Olive oil, 4 parts; white wax, 1 part; dissolve the wax in the oil over a gentle heat, and stir well as the mixture cools and thickens.) A simple ointment.

CETACEUM, D. L. E. *Spermaceti. A concrete found in peculiar cells of the head of Physeter Macrocephalus*, L. *Cetic of Physeter Macrocephalus, nearly pure*, U.—*Physeter Macrocephalus*, the great-headed sperm-whale, or a gregarious whale, inhabiting the Pacific Ocean and the Indian and Chinese Seas; it belongs to the class *Mammalia*, order *Cetacea*.

Prep.—Spermaceti is found in various parts of the body of the animal along with the common fat, it is chiefly obtained from a large, irregularly-shaped cavity existing in the head over the portion of the upper jaw, in which it is contained, mixed in oil, forming a milky-looking, unctuous fluid. It is separated from the oil by boiling in water, from which the spermaceti concretes as it cools; it is then purified by being pressed in a weak solution of potash, and the operation clarified, and finally, melted a third time by the agency of steam, and cooled slowly in the moulds.

P. P.—Spermaceti occurs in various-sized crystalline masses, generally white, which are formed of an infinite number of small brilliant scales; it is soft and unctuous to the touch, tasteless, and inodorous. Sp. gr. 0·943.

C. P.—It is composed of 2 atoms of *margaric acid*, 1 of *oleic acid*, 2 of *cetine*, and 2 of *water*. It may be readily pulverised by the addition of a few drops of alcohol, or of almond oil; it is fusible at 112°, combustible, insoluble in water, and only slightly soluble in alcohol, even at a boiling temperature; it combines with fixed or volatile oils, and with melted fats.

TH. E.—Spermaceti is an emollient and demulcent, but at present is not used internally. Externally, it is employed as an ingredient in various cerates and ointments.

Preparations.—*Ceratum Cetacei*, D.—*Cerate Cetæ*, L. (White wax, half an ounce; spermaceti, an ounce; lard, 3 ounces; prepared sugar, half an ounce; rose water, 2 fluid ounces; oil of roses, 1 fluid drachm; mix the wax with the oil, and when they are melted, add the rose water, and then the sugar, previously rubbed to a powder with a little water; lastly, add the oil of roses, and stir briskly till the mixture is cold.)—*Ungentum Cetæ*, L. (Spermaceti, 1 oz.; white wax, 1 oz.; olive oil, 1 pint; rose water, 2 fl. oz.; melt the wax and spermaceti with the oil by the heat of a water bath, and add the rose water gradually, stirring briskly till the mixture is cold.) An emollient ointment.—*Cerate, Spermaceti*, U. (Spermaceti, 1 part; white wax, 2 parts; olive oil, 10 parts; melt the spermaceti and wax with the oil by a gentle heat, and then add the rose water gradually, stirring briskly till the mixture is cold.) Similar to the last, but a softer preparation.

[illegible]

P. P.—[illegible]

C. P.—[illegible]

To. E.—[illegible]

[illegible]

Fabric, D. L. E. *Flour of the seeds of Triticum* [illegible]

L.—*Triticum vulgare* E. *Wheaten flour* [illegible]

[illegible]

Fig, L. E. *Ficus carica*, [illegible]

dried fruit of Ficus Carica.—A native of Asia and [illegible]

Europe, belonging to the natural family *Urticeæ* and [illegible]

Linnean class and order *Polygamia Dioecia*.

[illegible]

P. P.—Figs consist of the fleshy, pyriform receptacle [illegible]

within numerous small, reniform seeds. When [illegible]

are dried in the sun and packed in drums or [illegible]

Turkey they are imported. Some is grown from [illegible]

fresh), chiefly in baskets from Spain and Portugal (*Portugal*

Dried figs are too well known to require [illegible]

C. P.—Dried figs consist of all the [illegible]

[illegible]

[illegible]

To. E.—Figs are [illegible]

gentle laxative; they are most employed as an article of the table diet in medicine. They enter into the composition of the *compound decoction of barley*, and the *confection or electuary of senna*. Roasted figs are applied to gum boils to promote suppuration.

GLYCYRRHIZA GLABRA, D. L. E. *The (fresh, L.) root (and stocks, L.) of Glycyrrhiza glabra. Liquorice.*—A native of the South of Europe, now cultivated extensively in England; belonging to the natural family *Leguminosæ*, and to the Linnæan class and order *Diadelphia Decandria*.

E. C.—Root long, irregular, sometimes semi-erect, smooth, 4 to 6 feet high; stems many, rather prickly. Flowers (after) two-lipped, papilionaceous, blue or purple.

P. C. & E. or Pers.—The root is in the up to November, when the stems is three years old, washed, and the small fibres cut off; it is imported in large quantities from Spain and Portugal, the best grown in England is very esteemed. It must be large, fresh the outer surface be covering is with, and in a damp state.

P. P.—Liquorice root is in cylindrical pieces, from one to two or three feet long, smooth and plump when fresh, wrinkled in the dry state, about the thickness of the little finger, externally of an umber-brown colour, internally yellow; it has a faint earthy odour, but a sweet, mucilaginous, subacrid taste.

C. P.—It consists of a peculiar saccharine principle named *glycyrrhizine*, albumen, *fecula*, *caparagin*, or a principle analogous to it, some salts, and a thick, acrid, resinous oil. It yields its active principles to boiling water, but as the acrid oil is dissolved out by the aid of heat, the Edinburgh College directs cold water to be used for preparing the extract.

T. P.—Liquorice root is emollient and demulcent; it is chiefly employed in the form of extract or decoction in catarrhal affections; it is also used to give flavour to other medicines. Liquorice powder is employed in pharmacy as a covering for pills, or to give form to confections.

D. & M. or Ann.—*Extractum Glycyrrhizæ*, D. L. E. ("Prepared as the simple extract." D.—"An extract of genius." L. "Cut liquorice root into small chips, dry it thoroughly with a gentle heat, reduce it to a moderately fine powder, and proceed as for extract of gentian." E.) Extract of liquorice is imported in large quantities from Italy and Spain in the form of flattened rolls, about five or six inches long, an inch in breadth, and half an inch in thickness, enveloped in bay leaves; in this state it generally contains a large quantity of copper, acquired from the coppers in which it is prepared; it is therefore generally purified by dissolving in boiling water and inspissating; it then forms *stick or refined liquorice*. It is used as an excellent demulcent and household medicine, being allowed to dissolve slowly in the mouth.—*Decoctum Glycyrrhizæ*, D. (Liquorice root, bruised, 1 oz.; water, by measure, ℔j.; boil for ten minutes, and strain.) Chiefly used as a vehicle for other active medicines.—*Tinctura Glycyrrhizæ*, E. (Extract of liquorice and gum-arabic, of each, ℥j.; pure water, ℥xij.; dissolve, then to a mixture of boiling water and lime cream,

Cotton, K. *Raw Cotton. Hairs attached to the seeds of Gossypium herbaceum.*—A native of Asia, cultivated in America, belonging to the natural family *Malvaceæ*, and to the Linnæan class and order *Monadelphia Polyandria*.

P. P.—Cotton is a filamentous material, which, when examined by the microscope, is a flattened tube twisted on itself, and of a pale yellowish-white colour, tasteless, and destitute of smell.

C. P.—Cotton is a modification of *lignin*; it is highly combustible, and is completely insoluble in water, alcohol, ether, fixed and volatile oils, and all the vegetable acids.

T. E.—The only medicinal use made of cotton is in the treatment of burns: it is applied in all stages, but the earlier the better; if any blisters be present, they should be first opened. The most convenient form for its application is that which is known as *French wadding*, and which is prepared for the purpose. This should be applied in successive layers, the uppermost layer next the burn, so as completely to exclude the air; it should not be removed for five or six days, if possible, and then only the outer layers. Some surgeons, in extensive burns, use a spirituous preparation, wash before applying the cotton.

Gum arabic, E. Acacia, L. [and U. S. P.]. Acacia Arabica, *W.* Acacia vera, *Willd.* D. *Gum of various species of Acacia*, E.—*of Acacia vera*, L.—*of Acacia Arabica, and Acacia* [illegible] *Gummifera*, *Gum arabic*.—The species of the genus Acacia which yield gum are inhabitants of Arabia, Egypt, and Nubia; they belong to the natural family *Leguminosæ*, and to the Linnæan class and order *Polygamia Monœcia*.

P. C.—Small tears pale, horny, semi-transparent, brittle, fracture flat or glassy, sometimes small, yellow.

P. U. S. P.—Gum exudes from the trunk and branches of the tree in the form of a whitish or yellowish tasteless fluid, which hardens in the air and becomes brittle. It occurs in the form of roundish tears, more or less flattened on the two opposed faces by contact with each other, of a pale yellow or nearly white colour, translucent, and breaking with a smooth glassy fracture. It is inodorous, and has a mucilaginous taste. It is entirely soluble in water, forming a viscid liquid.

T. P.—Several varieties of gum arabic are met with in commerce; the most commonly known are, *Turkey*, or pale Egyptian, *Mogadore Gum*, *Senegal Gum*, *East Indian Gum*, and *Cape Gum*. Commercially gum arabic occurs in tears or irregularly-shaped pieces, varying in size from a pea to that of a pigeon's egg. It is transparent, colourless or pale yellow, and readily pulverizable. It has no odour, a mucilaginous taste, and a pale yellowish-white powder. It is soluble in water, forming a viscid, semi-transparent liquid.

1210 to 1245. The most transparent and whitest tears are picked out, and sold as *picked gum*, or *gum of first quality*. The other varieties of gum do not differ essentially from gum-arabic; they are usually in larger-sized pieces, and of a darker colour; they are inferior in quality to gum-arabic, and should not be used for medical purposes.

C. P.—Gum-arabic consists of 70·4 per cent. of soluble gum (*arabine*), 17·0 of water, and 3 of ashes. Some of the inferior sorts of gum contain a large quantity of insoluble gum (*bassorin*). Its elementary analysis is $C^{12}H^{11}O^{11}$. Gum is soluble in its own weight of cold or boiling water, forming a viscid solution (*mucilage*); it is also soluble in vegetable acids, but is insoluble in alcohol, ether, and the fixed or volatile oils. By exposure to heat, the water it contains is driven off; but it cannot be fused. Its solution in water reddens litmus paper faintly.

Adulterations.—The finer qualities of gum-arabic are adulterated with the inferior, and these again, with the other sorts; but the picked gum ought alone to be used in medicine.

Th. L.—Gum is demitive, emollient, and demulcent. It is employed in inflammation of the mucous membranes, in gastric irritation, in acrid poisoning, &c. Its chief use is as a vehicle for more active medicines, for suspending insoluble substances in water, and as a basis for pills in extemporaneous prescriptions. A strong solution has been recently proposed by Mr. Rand, of Edinburgh, as an application to burns. (*See Edinburgh Medical and Surgical Journal*, vol. lviii., p. 427.)

D. & M. of Arom.—In substance or powder, 3ss. to 3j., allowed to dissolve slowly in the mouth, in irritation of the fauces and in *tickling cough*.—*Mucilago Gummi Arabici*, D. (Gum-arabic, in coarse powder, 3iv.; hot water, fʒiv.; digest, shaking frequently, till the gum may be dissolved; then strain through linen.)—*Mistura Amygdalæ*, L. (Acacia, powdered, ʒx.; boiling water, Oj.: rub the gum with the water gradually poured in, and dissolve it.)—*Mucilago*, E. (Gum-arabic, ʒiv.; cold water, Oj.; mix, dissolve without heat, but with occasional stirring, and strain through linen or calico.) Mucilage made with *cold* water keeps best: the quantity of gum employed in the Dublin formula is too much by one half. The following proportions of mucilage are required to suspend different substances miscible with aqueous vehicles, according to the observations of Dr. Montgomery: "*Oils* require about three fourths of their weight. *Balsams* and *spermaceti* equal parts. *Resins* one part, and must five times its weight."—*Emulsio Arabica*, D. (Almonds, in powder, ʒij.; sweet almonds, blanched, white sugar, of each, ʒss.; water, by measure, Oj.; dissolve the gum in the water made hot, and as soon as the mixture is cold, pour it gradually on the almonds previously pounded with the sugar; rub them together till the liquor assumes the appearance of milk, and strain.)—*Mistura Amygdalæ*, L. (Mucilage, fʒvj.; sweet almonds, ʒvj.; pure sugar, ʒv.; water, Oj.; blanch the almonds, beat them in a mortar gradually, or marble mortar, first with

Pearl barley is prepared in a mill of a peculiar construction, by which, after it has been freed of the husk, it is rounded and polished.

P. P.—It is a small, spherical grain, white, semitransparent, having a trace of the longitudinal furrow of the seed; it is odourless, but has a mild, sweetish, mucilaginous taste.

C. P.—Pearl barley is composed of ferula, uncrystallizable sugar, gum, gluten, albumen, lignin, &c. Proust has indicated the presence of a peculiar principle in barley-meal, which he has named *hordein*, but Dr. Thomas Thompson states that it is merely a variety of *amylin*. Pearl barley yields its mucilaginous principles to boiling water; the decoction contains much starch, as shown by the action of iodine on it when cool.

T. P.—Pearl barley is employed in medicine in the form of decoction, as an emollient and demulcent drink in febrile and inflammatory affections, as a vehicle for other remedies, and to give bulk to enemata.

D. & M. or Aqua.—*Decoctum Hordei*, D. L. (Pearl barley, ℥ij (120 gm., L.); water, by measure, lbvss. (Oiss., L.); first cleanse the barley with cold water; then boil for a short time with ℥ss. (Oss., L.) of the water; throw away the liquor; pour the remainder of the water boiling on the barley; and, lastly, boil down to one half, and strain.)—*Decoctum Hordei comp.*, D. L. (Decoction of barley, by measure, lbiv. (Oij., L.); raisins (stoned, D.); figs, sliced, of each, ℥ij (60 gm., L.); liquorice root, sliced and bruised, ʒss. (15 gm., L.); during the boiling, add the raisins first, then the figs and barley, the liquorice a little before the conclusion of the boiling; which is completed when there remains only what will afford, by measure of strained liquor, D. "Add a pint of water, boil down to Oj., and strain," L.)—*Mistura Hordei*, P. (Pearl barley, ʒiss. sliced; red currants, stoned, of each, one ℥; liquorice root, sliced and bruised, ℥ss.; water, Oviij.; cleanse the barley, if necessary, by washing it with cold water; boil it with Oviss. of the water down to Oij.; add the figs, raisins, and liquorice root with the rest of the water; boil down again to Oij.; then strain.) These decoctions may be employed indiscriminately for the purposes above stated.

[illegible] CRITHMIFOLIUM, SEMINA ET OLEUM, D. L. E. *Linseed. Oil expressed from the seeds; Linseed Oil.*—The common flax, *Linum usitatissimum*, is an indigenous plant, belonging to the natural family Linaceæ, and to the Linnæan class and order *Pentandria Pentagynia*.

[illegible] Outline a flax in a fob and a half high, slender, branched above; leaves narrow; flowers large, purplish blue; capsules globular, compressed.

[illegible] *Linum usitatissimum*.—The seeds are obtained out of the plant when fully ripe, and the oil is obtained from them by pressure, without heat.

P. P.—The seeds are ovate, pointed, about a line in length, smooth, and shining; they are reddish-brown externally, whitish within; they have an oily taste, but are inodorous. The oil is clear, of a straw-yellow colour, with a faint, disagreeable odour and a mild mucilaginous taste. Sp. gr. .932. At [illegible] it

crushed, it is expressed with the aid of heat, when the product is called *linseed oil*. The seeds yield about 20 per cent. of oil.

C. P.—The seeds consist of vegetable mucus containing malic acid and some salts, extractive matter, starch, oil, resin, a colouring yellow colouring matter, and loss of moisture. The mucilage exists in the tegument, the kernel of the seed. The seed oil is composed of olein and margarin (with and glycerin), dissolves in 5 times its weight of boiling alcohol, in 10 times its weight of cold alcohol, and in about one part of ether. At a temperature of —17° it congeals into a white mass; when exposed to the air, it absorbs oxygen, thickens into a transparent elastic mass, and, especially, is called in the arts a *drying oil*.

Th. P.—Linseed and its oil are emollient and demulcent. An infusion of the seeds is sometimes employed internally in dysentery and diarrhœa, and in bronchial affections; it is also used as a mucilaginous enema. Externally, the seeds reduced to powder (linseed meal) are employed to prepare poultices and cataplasms; for a mixed with lime-water is used as an application to scalded parts.

D. A. M. or Adm.—*Infusum lini* compositum, D. L. *Infusum lini* (Linseed (bruised, D. L.), ʒi. (3v.), L. E.); liquorice root (bruised, ʒss. (3ij.), L. E.); boiling water, by measure, Oj. (Oss., L. E.); digest for four hours (near the fire, L. E.) in a covered vessel, and strain "through linen or calico," E.) *Linseed Tea*, the best drink for internal use; it may be sweetened with honey, which increases its excellent properties. *Dose*, f3ij. to f3vi. —*Linimentum Calcis*, D. E. (Lime-water and linseed oil, of each, f3vj.; mix with each other.) *Cerate oil*, an excellent application to painful burns and scalds.—*Pulvis pro Cataplasmate*, D. (Linseed, when reduced after the expression of the oil, one part; oatmeal two parts; mix.) Both the Dublin and Edinburgh Colleges erroneously direct linseed meal for poultices to be deprived of its oil by expression; as the powder of unpressed linseed is much more manageable in *Cataplasma simplex*, D. (Powder for a cataplasm any quantity; boiling water, sufficient to form a hard cataplasm to be mixed over with olive oil.)—*Cataplasma Lini*, L. (Boiling water, linseed meal, sufficient to make it of a proper consistence.)

Incomp.—Preparations of lead and iron, and probably most metallic salts, are incompatible with infusion of linseed.

Mucilago L. P.—*Herb of Malva Sylvestris*; *Common Mallow*—Indigenous, belonging to the natural family *Malvaceæ*, and of the Linnæan class and order *Monadelphia Polyandria*.

P. C.—[illegible] *P. E.*—It is odourless and insipid; every part of the plant abounds in mucilage, which it yields to boiling water. An infusion of the fresh flowers is an excellent cleanser of the eyes, but should always be strained to get rid of the insects and ova found in the flowers.

Ta. E.—A simple emollient: it is employed in the same cases as the other remedies of this class, but at present is not much used.

D. & M. ut Ass.—*Decoctum Maltæ comp.*, L. (Mallow, dried, ℥j.; carbonate, dried, ʒss.; water, Oj.; boil for a quarter of an hour and strain.) *Dose*, ʒjjv. to ʒvj.; chiefly used for fomentations, and in enemas.

Malvæ, L. E. *Petals of the rose mallow (of the tubers, L.) of Marvaisia arvadensis*, L. E.; *and of Marvaisia Indica*, L. *Ar.* ——*rot.*—*Marvaisia arvadensis* is a native of the West Indies; it is extensively cultivated in Jamaica. *M. Indica* is a native of the East Indies, and has been introduced into the *Ed. Ph.*, as it is supposed to yield some of the East Indian arrow-root. They belong to the natural family *Marvaisiaceæ*, and to the Linnæan class and order *Monandria Monogynia*.

P. O.—The rhizome is white, adherent, and jointed, running horizontally in the ground, sending down many fibrous rootlets (*fibræ*), from the thickness of a quill covered with scales; stem 4 to 8 feet high, leaves ovate, lanceolate, alternate, with long, hairy, petioles; flowers small, white.

P. O. & M. ut Pulv.—Arrow-root is the starch of the roots; it is procured from roots when they are twelve months old; they are first dug up, cleansed, and reduced to a state of pulp or powder, contrary the pulp is agitated with water, the fibres removed with the hand, the milky liquor passed through a fine hair-sieve, and allowed to settle, when it deposits the arrow-root, which is again washed well with water, and finally dried in the sun.

P. P.—*West Indian Arrow-root*, which is the most prized, and much more is officinal, is in the form of a very white powder, often aggregated into small, irregular masses, crackling between the fingers, mucilaginous and tasteless. Examined by the microscope, it is seen, like the other varieties of fecula, to consist of small elliptical grains, varying in size from a 2000th to a 4000th of an inch in their longest diameter.

C. P.—Its composition is $C^{12}H^{10}O^{10}$. In all other respects it resembles wheaten starch, already described, but the jelly which it forms with boiling water is much more consistent; according to the observations of Hayne, with equal quantities of boiling water, the jelly formed by 9 parts of arrow-root is as firm as that formed by 14 of wheaten starch.

Adulterations.—A great many varieties of fecula, known as Brazilian arrow-root, East Indian arrow-root, &c., but especially that obtained from the potato, *potato starch*, are commonly sold for the true West Indian arrow-root. The fraud is best detected by the microscope; the grains of which the true arrow-root is composed being much more minute than those of any of the other varieties.

Ta. E.—Arrow-root is rather an article of mild nutrition than for any benefit than a medicine. It is particularly valuable in consequence of its emollient properties in diseases of the digestive organs; it is also an excellent nutriment for infants and young children.

D. & M. ut Ass.—A tablespoonful is sufficient to form a thin jelly with a gill of boiling water or milk; to prepare it for use, the arrow-root should be first blended with a small quantity of the

fluid, the remainder then added, care being observed [illegible] and the whole then gently heated for a few minutes. It is usually flavored with lemon-peel, sugar, &c. Arrow-root and other nutritious gruel are made like the corresponding preparations of sago (which see). A fecula obtained from the pith of the Cycas circinalis, a native of the island of St. Kitts, has been recently introduced into Britain under the name of *Tous-les-mois*; it is said to equal in nutritive quality to arrow-root as an article of diet, and to surpass it in [illegible].

Olive oil.—*Olive Oil* (described in the dispensatories as acting also as an emollient; internally,) is only employed as an antidote in cases of irritant poisoning; as an external agent, it forms part of the composition of emollient ointments, liniments, &c.—Dose, from a drachm to an ounce. L. (Olivæ ol, ℥viss; white wax, ℥ij; melt them together, add ℥iss of rose-water to ℥iss of the oil, and stir the mixture briskly while it cools.) Used as a mild dressing.

Ovum, L. F. *The egg of Phasianus Gallus* (the domestic fowl, *Phasianus Gallus* (Gallus domesticus, Temminck) [illegible] class *Aves* order *Gallinæ*. Eggs are a mild and nutritious article of diet, and as such are frequently used in the sick-room. The white, or *albumen*, is employed as an antidote to poisoning by corrosive sublimate, or with the salts of copper; it is also useful in all cases of irritant poisoning. The yolk is employed in pharmacy for suspending camphor, oils, resins, &c., in aqueous vehicles.

Saccharum commune, D. Saccharum officinarum, L. Saccharum non purificatum, D. *Raw sugar*; *Muscovado*.

Succus concretus purificatus, D. Saccharum, L. Succus purificatus, E. *Pure sugar*; *White or refined sugar*.

Succus inspissatus, D. Saccharum rubrum, L. E. *Brown sugar*.—The sugar-cane, *Saccharum officinarum*, a native of India, cultivated in both the East and West Indies; it belongs to the natural family *Gramineæ*, and to the Linnæan class and order *Triandria Digynia*.

B. C.—Sugar solid, hard, from 3 to 12 feet high, reddish, [illegible] knots, &c. in stems, decreasing in the best; leaves [illegible] in a terminal panicle [illegible] two long, of a silver-gray colour, from the root and [illegible]

Pure.—The canes, when ripe, are cut off close to the ground and [illegible] ground from them by pressure between rollers; each of these is [illegible] to the liquor, until the juice is quite boiled, to assist in this and [illegible] some [illegible] matter. The clear liquor is then [illegible] a proper consistence in copper boilers, and allowed to cool in large [illegible] in which the [illegible] sugar is deposited in [illegible] the [illegible] sugar, or molasses. The latter liquor, which does not [illegible] [illegible] molasses or treacle. Raw sugar is refined in London, as in the [illegible] quantity of water to the [illegible] of which, [illegible] a small [illegible] [illegible] of white [illegible] of albumen, which [illegible] the [illegible] the impurities and [illegible] through a thick layer of [illegible] [illegible] is well evaporated by steam heat in copper vessels [illegible] [illegible] proper consistency, and poured into [illegible] [illegible] the sugar, [illegible] the [illegible] [illegible] [illegible]

P. & C. E.—The physical properties of the different varieties of sugar are too well known to need description. The specific gravity of crystallised white sugar is 1·6060. It is permanent in the air; exposed to heat, it melts, becomes brown, and emits a pungent odour; it is inflammable, burning with a white flame; it is soluble in two parts of water at 60°, and to any extent in boiling water; it is soluble in 90 parts of absolute alcohol at the boiling temperature, very slightly in the same when cold, and in about five parts of rectified spirit; it is much more soluble in proof spirit; it is wholly insoluble in ether, which precipitates it from its solutions. In the crystalline state, cane sugar is composed of $C^{12}H^{11}O^{11}$. Treacle consists principally of uncrystallisable sugar, gummy extractive, and a small quantity of water, which it retains with great tenacity.

Adulterations.—The inferior raw sugars frequently contain sand, which is left when the sugar is dissolved in water; white sugar is said to be adulterated with lime and gum: the former is detected by oxalic acid, the latter by diacetate of lead, producing white precipitates in a solution.

Ph. E.—Sugar is highly nutritious, but as an article of diet it is rather employed for its agreeable sweetness. As a medicine it is emollient and demulcent, and as such is used in coughs, and as a vehicle for nauseous drugs. In pharmacy it is in very general use as a flavouring ingredient, and to give bulk and consistence to powders, pills, confections, electuaries, lozenges, syrups, &c.—*Syrupus.* L. *Syrupus simplex*, D. E. (Pure sugar (in fine powder, D.), 7 pints (Dub., L. *Fl.*) water, by measure, *Ad.* (Old, L. E.); "add the sugar to the water gradually, and digest with a moderate heat in a close vessel, frequently agitating until it is dissolved: then pour it off from the dregs, (if there be any," D.: "dissolve the sugar in the water with the aid of a gentle heat," L. E.) As a flavouring adjunct to mixtures, and to suspend insoluble substances in aqueous vehicles.

Sago. L. E. *Dried pith of the trunk of Sagus Rumphii*, L. *Farina from the interior of the trunk of various Palmaceæ and species of Cycas.* E. *Sago.*—Three species of the palm tribe have been ascertained as sources of the sago of commerce, namely, *Sagus Rumphii*, *Sagus levis*, and *Saguerus Rumphii*; the first inhabits Ceylon and the Malay Islands; the second, Sumatra, Borneo, and the neighbouring islands; and the third, the islands eastward to the Bay of Bengal. They are all lofty trees, belonging to the natural family *Palmaceæ*, and to the Linnæan class and order *Monœcia Hexandria*.

Prep.—The tree being cut down, the pith is removed, reduced to powder, and the farina is washed from the woody fibre by repeated washings with water over a sieve; when the milky liquor which passes through is allowed to settle, it deposits the sago in the form of a fine powder, which is afterwards granulated by a process with which we are not acquainted.

P. P.—Sago occurs in the form of a fine powder (*Sago mundi*), or in pearly grains (*Pearl Sago*): both sorts have a pinkish yellow tint, a faint musty odour, but no taste. The grains of pearl sago

vary in size from a pin's head to that of a pea; the starch-grains are round or oval, the larger ones having a concentric lamination.

C. P.—In its chemical properties, sago resembles the other varieties of starch; as seen under the microscope, its globules are larger than those of arrow-root, but smaller than those of potato-starch.

Th. E.—As an article of diet for the sick room, sago is inferior to arrow-root or tapioca, consequently it is not much used in the present day. The jelly may be prepared with it in the same manner as with arrow-root.—*Sago milk*, Thomson. (Wash a tea-cupful of sago in cold water, *Oj.*; soak the same in the water for an hour, pour off the water, and add of new milk, *Oss.*; and boil slowly until it is well incorporated.) It may be flavoured with sugar, nutmeg, cinnamon, or white wine, according to circumstances.—*Sago pudding*, Thomson. (Beat the yolks of two eggs and half an ounce of sugar together, and stir the mixture into a pint of sago milk.)

SALEP.—This farina is prepared from the roots of several species of the genus Orchis, amongst others, it may be procured from the *Orchis mascula* and *O. latifolia*, both of which are indigenous; the process for obtaining it is similar to that for obtaining sago from the root, and it is used as a substitute for that substance.

SAMBUCUS NIGRA.—The flowers or the leaves of the common elder (described in the division *Cathartics*) are used as pectoral or emollient cooling ointment.—*Unguentum Sambuci*, D. (Fresh elder flowers, *viij.*; prepared hog's lard, *xvj.*; prepared mutton suet, *xij.*; make an ointment in the same manner as the simple ointment.)—L. (Elder-flowers and lard, of each, *lbj.*; boil the elder-flowers in the lard till they become crisp, and press through a linen cloth. The latter ointment, as having an aperient property, should be preferred.

TAPIOCA, L. *Fecula of the root of Janipha Manihot.* Tapioca. A native of Brazil, belonging to the natural family *Euphorbiaceæ*, and to the Linnæan class and order *Monœcia Monadelphia*.

S. C.—Tapioca, dark, grey; granules of flat style, smaller, more regular than sago; starch-cells unitary, numerous.

Prep.—The root, which consists of woody fibre, a bland farina, and a bitter acrid, poisonous milky juice, is grated to a pulp under water, and strained to separate the farina, which is repeatedly washed with water to free it from the poisonous juices, and, finally, dried on hot plates.

P. P.—Tapioca occurs in irregularly-shaped, rounded fragments, about the size of a small bean, white, with a pearly lustre, translucent and horny. Like the other farinas, as seen under the microscope, it consists of small globules very uniform in size, most nearly as small as the smallest globules of sago-meal.

C. P.—It is similar to the other varieties of farina in its chemical properties.

Th. E.—Tapioca is chiefly valuable as being an agreeable jelly easy of

prepared in the same manner. Tapioca milk and Tapioca pudding are made in the same way as sago milk and sago pudding.

TRAGACANTH, L. P. TRAGACANTHA GUMMI, D. *Gummy exudation from Astragalus verus*, L.; *and other species*, E.; *Gum of Astragalus creticus*, D.—*Several species of the genus Astragalus yield gum-tragacanth; they are natives of Asia Minor, Persia, and of the island of Crete. They are placed in the natural family Leguminosæ, and in the Linnæan class and order Diadelphia Decandria.*

E. C.—The Astragalus verus, which yields the finest gum-tragacanth of Smyrna commerce, is a small shrub, from 2 to 4 feet high, with spiny branches, pinnated leaves, and yellow papilionaceous flowers.

Description.—Tragacanth flows from natural fissures in the bark, and concretes into solid white ribbons by the sun; it flows most during the hot months and in the night-time.

P. P.—Gum-tragacanth occurs in broad, thin plates, of a white or citron-yellow colour, semitransparent, marked with concentric elevations. It is tasteless and inodorous, is hard and brittle, but with difficulty reduced to powder, unless heated to 100° or 120° F.

C. P.—It is composed of 57 per cent. of soluble gum (*tragacanthin or arabin*), and 43 per cent. of gum insoluble in cold, but soluble in boiling water (*bassorin*). (Bucholz). Its ultimate analysis is C 44·44, O 55·56. Gum-tragacanth forms a thicker mucilage with water than gum-arabic, "one part giving more viscosity to water than 25 parts of gum-arabic" (Bucholz).

TR. E.—Similar in those of gum-arabic, but not so generally employed.

D. & M. or ADM.—Powder, 3ss. to 3ij.—*Pulvis Tragacanthæ comp.*, L. P. (Tragacanth, bruised; gum-arabic, bruised; and starch, of each, 3ss.; pure sugar, 3iij.; reduce the starch and sugar to powder, add the tragacanth and gum-arabic, and powder the mixture thoroughly.) Generally used for administering colocynth and other active and heavy powders to children; the dose, as an emollient for adults, is 3i. to 3ij.—*Mucilago Gummi Tragacanthæ*, D. E. (Tragacanth, powdered, 3ij.; (boiling, E.) water, fʒviij. (fʒx., E.); macerate in a close vessel until the gum is dissolved (for 24 hours, and triturate to dissolve the gum, E.), and strain through linen.) Used for the same purpose as mucilage of gum-arabic.

TANACETUM VULGARE, D. L. *The flowers and leaves*, D.; *whole herb*, L. *of Tanacetum fructus*; *Ordfirst*.—Indigenous, belonging to the natural family *Compositæ*, and to the Linnæan class and order *Syngenesia Superflua*.

E. C.—*Stem* erect; *leaves* large, cordate, downy beneath; *flowers* yellow, globose, appearing before the leaves.

P. & C. P.—The dried herb is odourless, but has a mucilaginous, slightly bitter taste. It is chiefly composed of mucilage and bitter extractive. It yields its properties to boiling water.

TR. E.—Although tanacetum was formerly highly esteemed as an emollient and deobstruent in chronic hypochondriasis and in amenorrhœa

[illegible] the present day [illegible] employed externally as [illegible] [illegible] a decoction, in the dose of [illegible] [illegible] repeatedly.

[illegible] [illegible] [illegible] [

producing a new irritation or determination to the surface of the body, or to some remote part. Independently of this effect, however, blisters, which are the most important medicinal agents in this division, are also as general stimulants to the system, and as such are frequently used with much benefit in the advanced stages of typhoid fevers, and in spasmodic affections arising from debility. This secondary effect of blisters should be borne in mind, and, consequently, their application should be avoided in the very acute stages of inflammatory diseases, until the general excitement is previously subdued by antiphlogistic means. Epispastics are generally employed *to wear the seat of the disease as possible*, unless when the intention is to produce a determination to some remote part of the body, as in the application of sinapisms to the feet in affections of the head.

[A single sentence in the foregoing paragraph has been *italicised*, for the purpose of expressing dissent. It is true that the author immediately qualifies it, by referring to the exception in the case of sinapisms to the feet in affections of the head. But in most examples of disease in which epispastics are applied, whatever other objects may be contemplated, one of the indications to be fulfilled by these agents is that of *counter-irritation, derivative, revulsive*, and hence they should be applied remote from the seat of disease. In the United States, most practical men concur in the opinion that blisters to the extremities are more serviceable in inflammations of the viscera of either of the great cavities of the body than when applied over the part affected. Especially is this the fact in pleurisy; for though in bad cases shaving the head for the application of ice is often resorted to, yet blisters, instead of being applied to the scalp, thus aggravating the disease, are judiciously placed upon the thighs, or upon the spine.

Blisters should be applied to children with great caution, never being suffered to remain upon infants longer than two or three hours. For want of this precaution, not only strangury may ensue sometimes, but deep ulceration, and sloughing of the integument has often been fatal. A few grains of opium with camphor may be blended with the ointment before spreading it, when strangury is apprehended, as in certain inflammations of the bladder and adjacent structures.]

Remedia caustica sicca. II. *Nervous vicious vigour.* L. *Causticum siccum exterius.* E. *Stronger solution of Ammonia.*—[Other preparations have been described in the divisions *Antacids and Cautics.*] Applied to the surface of the body, the strong solution of ammonia produces redness and irritation, and if the application be long enough continued, it vesicates. Its only advantage as a blistering agent is that it operates speedily, on which account it is employed in inflammation suddenly attacking any of the abdominal viscera, as in retrocedent gout. In diseases of the urinary organs it should be preferred as a blistering agent to cantharides, in consequence of the greater action of that substance on the kid-

acts. As a counter-irritant it is frequently used to relieve internal inflammations; and as a rubefacient is employed in rheumatic pains.—*Linimentum Ammoniæ*, U. St. P.—*Hartshorn and oil.* (Solution of ammonia (*Sp. gr.* .960, ℥ij.; oil, ℥iij.; olive oil, ℥ij.; rub, with agitation.) An excellent counter-irritant much employed in inflammatory sore throat, applied on a piece of flannel. By increasing the quantity of ammonia it produces more powerful effects.—*Linimentum Camphoræ comp.*, P. L. (Camphor (with plus ℥j.) rectif., L.); solution of ammonia, ℥vj. (℥vss., L.); spirit of lavender, *by measure*, ℥ij. (℥j., L.); mix the solution of camphor with the spirit, then let a pint distil from a glass retort with a slow fire; lastly, dissolve the camphor in it.—*Linimentum Ammoniæ comp.*, L. (Stronger spirit ammonia, *Sp. gr.* .880, ℥ij.; tincture of camphor, ℥ij.; spirit of rosemary, ℥ij.; mix well together; to this be gently washed with ℥iij. of tincture of camphor and ℥ij. of spirit of rosemary.) These preparations are used for the same purposes as the liniment of ammonia; they are cleanly, quick in their action, and equally efficacious.—*Linimentum Ammoniæ saponatum*, L. (Solution of sesquicarbonate of ammonia, ℥ij.; olive oil, ℥ij.; shake together until they are well mixed.) Its effects are much similar to those of *Linimentum Ammoniæ*.—*Liniment of camphor*, Goxheer. (Mutton suet and olive oil, *of each* 4 part; melt together with a gentle heat, and incorporate with two parts of strong solution of ammonia.) An excellent and prompt liniment.

Antimony or tartar, tartar.—*Tartar emetic* (described in the division *Diaphoretics*), applied by friction to the skin, produces a crop of pustules, which ulcerate and discharge purulent matter, thereby counter-irritant effects. With this intention it is very frequently employed in various affections of the thoracic and abdominal viscera; in vesicular inflammations of the brain or spinal cord and their membranes; in diseases of the joints; in sciatica and neuralgic pains, &c. It is usually spread on the part of ointment or saturated solution; or from *gr.* v. to *gr.* x. may be rubbed over the surface of any simple plaster, and left on until it produces the desired effect.—*Unguentum Tartari Emetici*, L. *Unguentum Antimonii Pharmacopœiæ*, L. *Unguentum Antimonii*. (Tartar emetic, in very fine powder, ℥ss. (*gr.* x., L.); prepared lard, ℥i. (℥v., L. K.).) The Dublin preparation is too weak, and consequently, often fails to produce any effect. This liniment is employed by rubbing about half a drachm on the part night and morning; in two or three days pustules begin to appear, when the application of the liniment should be discontinued, as it might give rise to troublesome ulceration. The counter-irritant action is also produced by means of plasters of this ointment, as in the epispastic, more speedy than that of the ointment.

Aqua fortis.—Boiling water has been used as a counter-irritant and corrosive vesication, as a means of relieving the pain of [illegible]

caused by it, and the troublesome ulceration which it is apt to occasion, forbid its use except in extreme cases.

Artificial Cauterets of A. Indica, D.—At the time of the publication of the Dublin Pharmacopœia, it was generally believed that the Chinese prepared moxa from the leaves of the above plant; but, according to Lindley, it is the leaves of another species, the *A. chinensis*, that they employ for this purpose. The latter is a small shrub, a native of China, belonging to the natural family *Compositæ*, and to the Linnæan class and order *Syngenesia Superflua*.

Prep.—Moxas are prepared in China and Japan from whence we have derived the use of them, by rubbing the downy covering of the leaves into a tenacious wool, and rolling into small conical masses. In England they are prepared rather from the pith of the stems of the *Helianthus annuus*, the common sunflower, or by making rolls with a concentrated solution of nitre, and forming into small masses of the same shape as the Chinese moxas. More recently, Professor Osborne, of Dublin, has proposed the use of pads formed of cotton as substitutes for the common moxas (*Dublin Journal*, vol. xx., p. 406).

Effects and Uses.—The first sensation felt on the application of a moxa is rather agreeable, but it soon causes intolerable pain, which, however, does not last long. Redness and inflammation of the part to which it is applied are produced, and an eschar formed immediately under the spot on which it has been placed, which extends to a considerable depth if the moxa be kept long in contact with the skin. The eschar separates in from eight to ten days, the process of inflammation set up for its discharge being attended with more or less suppuration, according to circumstances; and a discharge of purulent matter may be established after the separation of the eschar by the application of irritating ingredients or by the interposition of some pus. Moxas differ from the actual cautery, in that their effects are produced more slowly, and that the inflammation caused by them penetrates more deeply. The principal diseases in which the application of moxas has been found beneficial are, in Pott's curvature of the spine, in inveterate sciatica, in neuralgia, in paraplegia, in chronic inflammation of the joints, in amaurosis, &c. The good effects produced by moxas depend on the principle of counter-irritation. Their use is contra-indicated in all acute inflammatory diseases.

Moxa or Cautery.—The spot is set on fire, and the base kept firmly applied to the skin by means of a piece of wire or a pair of forceps; the neighbouring parts should be covered with bits pieces of linen, to protect them from the sparks; the combustion may be quickened by the blowpipe or with the breath. Professor Osborne applies the gunpowder moxa as follows: "Moist gunpowder in powder, to the depth of about half an inch, is placed on the skin inside a *paste* moxa, or a strip of card bent together and tied so as to form a circle; some water is dropped on and mixed with it. The ordinary fuse from a flask in answers well if fresh." Moxas should be applied as close to the seat of the disease as possible; George Larrey considers that their application to the following parts of the body is improper: to the head where the scull is

covered with skin and pericranium only; to the sternum, clavicles, larynx, trachea, sternum, glandular parts of the [illegible] over the course of superficial bodies, and other [illegible] there is danger of injuring the articular cartilages and [illegible] parts of bone. To these we may add, [illegible] course of large arteries, veins, or nerves.

Cantharides (described in the division *Diuretics*) are employed externally to produce rubefaction, vesication, or suppuration. The first of these effects is caused by the application of cantharides mixed with other substances to limit their activity, as in the *emplast. cantharidis*, B., or by applying the active preparation for only a short space of time. To produce rubefaction, we employ cantharides in the treatment of rheumatic and other [illegible] the sub-acute catarrh, and in the habitual cough of [illegible] When cantharides are left for some time closely [illegible] surface of the skin, the cuticle is raised, and serum [illegible] between it and the true skin, a blister being thus produced in a period varying with the preparation of the skin which [illegible] No agent is so generally used to produce vesication as [illegible] in consequence of the certainty of their operation, the [illegible] little pain which they occasion, and the facility with [illegible] may be applied. Blisters are employed in a great [illegible] cases, generally with the intention of relieving pain, [illegible] and congestion of internal organs, which they effect by [illegible] to the surface of the body, or, as it is usually termed, by [illegible] irritation. With this view, they are applied in both the [illegible] chronic forms of inflammation of the brain and spinal cord, [illegible] scalp, or along the track of the spinal marrow; in inflammatory affections of the thoracic and abdominal viscera, to the region of the chest or abdomen; and in the local congestions of [illegible] near the affected part as possible. Blisters are also used to [illegible] into to movement action, as in indolent bubos, in chronic [illegible] ment of the testicle, over chronic abscesses, in sinuses [illegible] in effusion into the joints. To excite the system generally, [illegible] are applied in the comatose stages of typhoid fever or pernicious cholera, and in apoplectic affections. To produce suppuration, cantharides are used in the form of ointment, [illegible] from which the cuticle has been previously removed; [illegible] erful counter-irritants, are thus employed with much advantage in chronic inflammatory diseases, forming what is termed a [illegible] issue. Cantharides should not be employed to produce [illegible] where any irritation or inflammation of the urinary [illegible] ent, in consequence of their peculiar tendency to produce [illegible] In infants and young children, blisters should be used with great caution, as they are liable to produce [illegible] in many instances has caused death. As a general [illegible] should only be left on until redness of the surface is produced [illegible] the application of a warm poultice to the part [illegible]

...

...

...

E. *Capsicum*, or *Chillies*. *Cayenne pepper*.—The Chilli or Guinea is a native of the East and West Indies, and of Brazil. It belongs to the natural family *Solaneæ*, and to the Linnæan class and order *Pentandria Monogynia*.

A. C.—

P. C. & H. or Pass.—Cayenne pepper is prepared by reducing to a fine powder the whole fruit or the seed of other species. It is often imported in powder, chiefly from the West Indies, in small quantity, but the greater part is ground at home, a fourth part of common salt being generally mixed with it.

P. P.—A moderately fine powder, of a reddish yellow colour, with a faint aromatic odour, and a bitter, acrid, burning taste.

C. P.—The active principles of Cayenne pepper depend on a very acrid oil, which has been named *Capsicin*. It yields its virtues to water, alcohol, ether, acetic acid, and the fixed and volatile oils.

Th. E.—Cayenne pepper applied to the skin produces redness and inflammation, which is followed by vesication, if the application be continued for some time. As a rubefacient and even vesicant, it is much employed in the West Indies, but is scarcely ever used with either of these intentions in Great Britain; as an excitant, applied in the form of cataplasm, it is a most valuable and effectual counter-irritant. Its use as a stimulant will be considered under that head.

Castoreum, Croton Oil (described in the division *Cathartics*), rubbed on the skin, produces redness and inflammation of the part to which it is applied, which is followed by a copious pustular eruption. It is applicable to all cases in which we wish to produce speedy and active counter-irritation, but it should not be applied to the face or scalp, as in cases that have come under my notice it produces erysipelatous inflammation of those parts. To prepare a liniment of croton oil, one part may be rubbed up with seven of olive oil, a combination sufficiently powerful for general employment in hospital or dispensary practice. Linseed oil may be used instead of olive oil.

Cephaelis, L. P. *Ipecacuanha Carabossana*, Arnott's variety. *Characters of Cephaelis officinalis*, L.—*C. Ipecacuanha*, Rich. D.—*Characteristic marks of undetermined species of Cephaelis*. K. *Kephaëlium*.—The species of the genus *Cephaelis* from which the gum-resin has been obtained, is not yet accurately determined; it is a native of the north of Africa. The genus belongs to the natural family *Rubiaceæ*, and to the Linnæan class and order *Monandria Monogynia*.

A. C.—

which is milky, pale reddish; the glass containing the last part is rather gummy, and by gentle heat will yield dust. The remaining water in this gum-resin. Water when boiled on it are reduced to the a weak even more faintly and unpleasantly.

V. P.—*Euphorbium* is in tears or small irregular masses, resinous and angular, somewhat friable; they are of a dull yellow colour, and pierced with small holes formed by the spines of the branch on which they concrete. They have a weak odour, but a very acrid and burning taste; the powder snuffed into the nostrils produces much irritation, with incessant sneezing.

C. P.—It consists principally of resin, the active agent, with wax, some caoutchouc, and salts of lime and potash. The resin is soluble in alcohol, but water has no action on it. Euphorbium melts when exposed to heat, is inflammable, and burns with a bright flame, and a rather agreeable odour.

Ph. E.—Applied to the surface of the skin, it causes much irritation, but does not vesicate or produce any eruption; if the cuticle, however, has been previously removed, its application causes a purulent discharge. It may, therefore, be employed with much advantage mixed with lard as an issue ointment, or for keeping up a discharge from blistered surfaces, being cheap and certain in its effects. *Five* or *ten* ointment, 25 to 60 grains may be rubbed up with an ounce of lard, and the strength may be increased or diminished according to circumstances. It possesses the advantage over the preparations of cantharides, that it does not irritate the urinary organs; and over savine ointment, that it does not spoil by keeping. The facility with which we can increase or reduce its strength is also of great importance.

Ipecacuanha (described in the division *Emetica*) is an excellent rubefacient: applied in the form of liniment, prepared as directed below, it produces an eruption of minute vesicles on an inflamed base in from 36 to 48 hours, which fade away in four or five days. It possesses the advantage of not causing much pain or constitutional irritation.—*Liniment. Ipecacuanhæ.* (Ipecacuanha, in very fine powder, ℈ss; camph. ℥ij; olive oil, ℥iss; rect.) A fourth part of this should be well rubbed into the part we desire to irritate three or four times a day.

Mezereon. *Mezereum* (described in the division *Diaphoretica*).—The inner bark of the stem and branches is much employed on the Continent as a vesicatory, but as in the dry state its effects are uncertain, and slowly produced, it is not used in Great Britain as such. In France, in order to produce a blister with this substance, a piece of the bark is softened in warm water or in vinegar, and applied to the part with a compress and roller; at first the bark is renewed night and morning, but when the blister is produced it is only changed once daily. An issue ointment is also prepared with it, by digesting for 12 hours the shred bark in vinegar and wax, and lard melted together, and straining.

RANUNCULUS ACRIS, POLLS, D. RANUNCULUS BULBOSUS, POLLS, SECTION D. *The leaves of* Ranunculus acris *and the whole plant of* Ranunculus flammula—Indigenous, belonging to the natural family *Ranunculaceæ*, and to the Linnæan class and order *Polygamia Polygynia*.

Several species of the genus Ranunculus possess vesicating properties in the recent state, but when dried they are inoperative. They were formerly used as epispastics, and although the two species above mentioned are still retained in the British Pharmacopœia, they are never employed in the present day as vesicating agents.

RUBUS FRUTICOSUS (described in the division *Antipyretici*). The fresh leaves may be employed as a local stimulant, and astringent.

SABINA.—*Savin* (described in the division *Emmenagogi*) is used as a powerful local irritant. It is very generally employed in the form of ointment or cerate for keeping up the discharge from a blistered surface, producing what is termed a *perpetual blister*. Owing, however, to the difficulty in preparing the ointment required to be long kept, to consider properly, and to its losing its properties by long keeping, to consider properly, the ointment prepared with cantharidine (see page 204) should be preferred for this purpose.—*Unguentum Sabinæ*, D. *Cerussæ Nitratis*, ℥ ij. *Sabinæ recentis*, ℥ j. (fresh, L.; fresh leaves stripped from their stalks, D.), *hydrargyri* ℥ ij. (D., L., 2 parts, E.); *prepared lard*, ℥ij. (3 parts, E.); *wax*, ℥ij. (1 part, E.); "boil the leaves in the fat until they become crisp; strain with expression; then add the wax, and [illegible] gently." D. "Boil the savin in the lard and wax melted together, (until the leaves become crisp, L.), and press through a linen cotton, L.) cloth." L. E.) When well prepared, the ointment is of a fine green colour, and has the peculiar odour of the plant remarked.

Blisters and issues are employed to produce derivation from some internal organ, by causing a discharge of pus from the surface of the body, as in deep-seated local inflammations. They also establish a drain from the system in many diseases. When used for their proper intention, they are employed in ophthalmia, in chronic inflammation of the ear, in diseases of the brain and spinal marrow, in diseases of the eyes of the vertebræ, in chronic arthritis, inflammation of the joints, swelling in hip-joint disease, &c. With the latter, in hydrocephalus, epilepsy, chorea, spasmodic asthma, phthisis, hepatitis, &c. When blisters or issues are employed in local affections, they should be placed as near the seat of the disease as practicable; but when employed in general diseases, they may be placed in whatever part of the body is most convenient; those which are intended to act on the organs of the chest, and organs of the lower part of the body, are usually placed on the inside of the arm. The operation of raising a blister is easily effected with a mixture of equal parts of [illegible] and [illegible] applied [illegible]

brown, slightly curved, and having an eye in the handle; a fold of the integument being held up, the needle is forced through, and by its means a skein of silk, or a piece of India-rubber tape sufficient to fill the aperture, introduced through the wound; a fresh portion of the silk or India-rubber is drawn through the aperture daily, and if it does not produce sufficient irritation, it is smeared with some irritating ointment. Issues are more employed at present than setons; the manner in which they are inserted has been explained before (see page 137).

Sinapisms.—*Mustard* (described in the division *Emetics*) applied to the surface of the body acts as a local irritant, producing inflammation attended with much pain, and if the application be long continued, vesication, with even ulceration and gangrene. It is very generally employed, in the form of cataplasm, or, as it is technically called, *sinapism*, to produce counter-irritation; applied to the soles of the feet or calves of the legs, in the low stage of typhus fever, especially when stupor or delirium is present, in apoplexy and coma, in narcotic poisoning, and in other cases in which there is determination to the head. It has also been applied to the chest in acute pulmonary and cardiac diseases.—*Cataplasma Sinapis*, D. L. (Mustard seed and linseed, each powdered, ℥ss.; boiling vinegar, sufficient to make a cataplasm. "Which may be made more stimulating by adding ʒij. of scrapings of horse-radish root," D.) There is a bad form for preparing sinapisms, as vinegar lessens the activity of the mustard; a better plan is simply to mix common table mustard with lukewarm water, and spread on a piece of linen. Sinapisms produce inflammation in from fifteen to twenty minutes after they are applied; the length of time which they should be left on may be regulated by the feelings of the patient; but if he be insensible, they should be removed as soon as the skin is reddened.

Turpentine a stimulant.—*Oil of Turpentine* (described in the division *Anthelmintics*) is a speedy and effectual rubefacient; when applied to the surface of the body, producing active inflammation, succeeded by a crop of small pimples, and sometimes minute blisters. If it be applied warm, it acts more quickly and more powerfully. As a counter-irritant, it is very generally and very beneficially employed in inflammatory attacks of the thoracic or abdominal viscera, in colic and peritonitis, in sore throat, in chronic rheumatism, neuralgia, &c.—*Linimentum Terebinthinæ*, D. L. (℔ss. Ointment of white resin, ℥ij.; oil of turpentine, ℥vss.; gradually mix the turpentine with the melted ointment." D. "Soft soap ℥ij.; camphor, ʒss.; oil of turpentine, fʒvss.; shake them together until they are mixed." L. "Oil of turpentine, ℥v.; resinous ointment, ʒvss.; camphor, ʒss.; melt the ointment, and gradually mix with the oil and camphor till a uniform liniment be formed." L.) This liniment is powerfully stimulating; it was first employed by Keyish as an injection during the extensive burns particularly when

the vital powers were sinking, and for the purpose it is said with much advantage; the part is first anointed with oil of lime, and pledgets of lint covered with this liniment are then applied. It is also used as a counter-irritant, applied with friction to neuralgic and rheumatic pains.—*Dr. John Lang's Liniment.*—Take of oil of olive one egg; oil of turpentine, three; strong acetic acid, half a fluid ounce, five; first rub the yolk of egg the white and the acid together, then add the oil of turpentine and agitate the whole until they are well mixed.) This excellent counter-irritant liniment is applied by means of a sponge; the friction must be of the same force which is used in rubbing, and with the same degree of speed that the application is continued.

CHAPTER XIII.

ERRHINES.

(Sternutatories—Ptarmics.)

Errhines are substances which, when applied to the lining membrane of the nostrils, cause an increased discharge of their natural secretion. Their medicinal employment is very limited, and at the present day they are seldom resorted to as regular remedies. Their remedial powers depend on the derivation which they occasion from the surrounding or neighbouring parts, by the increased secretion from, and consequent afflux of blood to, the mucous membrane. Snuffed into the nostrils so as to occasion sneezing they may be employed to excite respiration when this function is suppressed, or to promote the expulsion of foreign bodies lodged in the air passages; their use for these purposes, however, is not unattended with danger.

Arum Triphyllum, Willd., D. Arum, L. *Leaves of American Europeum.* *Aroideæ.*—An indigenous plant, belonging to the natural family *Aristolochiaceæ*, and to the Linnæan class and order *Dodecandria Monogynia.*

R. Corm or root-stock; l. leaves; f. receptacle, enclosed among the leaves; from the axil of the two leaves, longer, ascending, is a peduncle bearing a spadix enclosed in a sheath or spathe.

T. P.—Although the leaves only are officinal in the whole plant is kept in the shops; it has a fetid, spicy taste, and a bitter, acrid taste. The root is the most active part of the plant.

C. P.—The only important constituent of the leaves is a volatile principle which has been named starch; the root contains also a volatile oil, and a very acrid fixed oil.

T. E.—Arum was formerly employed as a stimulant and emetic; in the present day it is only used as an errhine.

and which has been named veratria (see Veratrum), combined with gallic acid (Pelletier and Caventou). More recently Simon has announced the discovery of two new vegetable alkalies in white hellebore root, one of which he has called Jervina and the other Rubyina. The activity of the root is extracted both by water and by alcohol.

Th. E.—The local action of white hellebore root is powerfully irritant. Snuffed up the nostrils, it produces a copious flow of mucus, with much sneezing. It may be used as an excitant in the same cases as the other remedies of this class. Two or three grains of the root finely powdered, and mixed with ten or twelve grains of powdered liquorice root, orris root or starch, may be employed every evening. It enters into the composition of some errhine snuffs.

[Some of them contain also a proportion of the powder of the *guinea's Cucodemis*, and are said to be useful in polypus nasi.]

CHAPTER XIV.

EXPECTORANTS.

(Pectorals.)

Expectorants may be defined medicines which promote discharge from the bronchial tubes and air-passages, and facilitate their discharge. There are no substances which, by a direct or special action on the lungs, produce expectoration; those medicines which are employed with this intention act relatively; that is to say, they operate through the medium of the system generally, either by removing that state of disease which demands the use of expectorants. Consequently, most agents which are used under this head are derived from other divisions of medicinal substances; and they are none more uncertain in their effects. There are two points in which the medicines employed to promote expectoration appear to act: first, by removing constrictions of the pulmonary vessels, on which principle the nauseating expectorants appear to confer their effects; or, secondly, by stimulating those vessels to either increase the natural exhalation where it is deficient or to change the character where it is in an unhealthy state. To these we add all gentle substances which, by their mechanical action, dislodge accumulated secretions from the respiratory surfaces, and thus frequently become most valuable agents in the treatment of many diseases which demand the use of expectorants.

The author admits that there are no expectorants which act directly or specifically, and considers that no medicine operates more uncertain in their effects than these articles; and in defining the different classes in which they are arranged

these effects, when they produce or promote expectoration, in three several agencies, which are strictly either *alterative, antispasmodic*, or *tonic*, and hence most of the articles of this class will be found enumerated in the alphabetical catalogue of those three divisions. We retain this class, therefore, as for some others, not of deference to the prescriptive right of tradition, from periods so remote in antiquity, that beyond "the memory of man runneth not."

If there be any form of medication worthy of confidence as directly expectorant, it is not to be found in the introduction of any drug into the stomach. The inhalation of medicated vapour by the lungs, from a suitable vessel at a proper temperature, can alone be strictly expectorant in the same city same inspire; and yet this is not even hinted at by the authors who still retain this fallacious term, which ought to be obsolete, as it serves only to perpetuate error.]

Acidum benzoicum, D. L. E. *Benzoic acid. Flowers of Benjamin.*

P. P.—Soft, elastic, pearl-white, satiny crystals or scales, having a faint, aromatic odour, and an acid, penetrating taste. *Sp. gr.* 0·627.

C. P.—Its composition is $C^{14}H^{6}O^{4}$, combined in the crystallized state with one eq. of water. It is permanent in the air; at a temperature of 248° it fuses, and at 296° sublimes; heated to the open air, it produces a white vapour, which irritates the fauces. *Benzoic acid* requires 200 parts of cold water or 18 of boiling water for its solution; it dissolves in 2 parts of cold alcohol or ether, and in a less quantity of acetic acid or oil of turpentine. It possesses the usual characteristics of a weak acid.

Prep.—*Ph. L.* "Benzoin, 6 parts; recently burned lime and muriatic acid, of each 1 part; water, 100 parts; mix the benzoin with the lime, boil the half an hour in the pure of water, constantly stirring; let the vessel rest, and pour off the clear white solution; boil the remainder in 50 parts of water, and again pour off the liquor when cold; boil the mixed liquors to one half, filter through paper, and add gradually the muriatic acid to the liquor when cold; lastly, the liquor being poured off, wash the powder with a small quantity of cold water, dry with a gentle heat, and sublime the benzoic acid in a proper vessel with a slow fire." *Lond. Pharm.*—"Benzoin, 3ij; lime (a sufficient quantity, 3j); put it into a proper vessel, pour on cold water three pints, and boil for an hour; then add muriatic acid, 3ij, and, with a gradually raised heat, sublime as long as anything rises; press the sublimed benzoic acid between folds of Bibulous paper to remove the oil from it, and sublime it again."

Ed. P.—Mix the benzoin thoroughly with an equal weight of fine sand and sublime, &c.]

Adulterations.—It is not liable to adulteration, but is often badly prepared; when good it is colourless, entirely sublimed by a gentle heat, and completely soluble in solution of potash or lime-water.

Use.—Although formerly highly esteemed as a stimulating expectorant in chronic bronchitis, in the present day it is scarcely ever employed, except in the *Tinctura opii camphorata, D. L., Tinctura camphoræ, comp., L.*, and the *Tinctura opii ammoniata, L.*, of both of which preparations it is an ingredient.*

* In the U. S. Dispensatory, the author has fully refuted the statements of the pharmacologists in the foregoing paragraph, and has shown the advantages of the acid when given in a state of vapour

D. & M. or Aqua.—Ox, 5 to 20 gr. with 5 drachms of water, should be given in a large quantity of water, as otherwise it is apt to irritate the throat. Its solubility is much increased by giving it with glycyrrhiza or balsam of soda.

Incomp.—Alkalies and their carbonates, acetate of lead, &c.

Antidote to nitrous vapour.—Tonic mixture (prescribed in the division *Diaphoretics*), administered in small doses every hour, or of a grain frequently repeated, operates as an expectorant, and its effects as such are more certainly manifested if it be given soon to produce nausea. It is best adapted for acute attacks of inflammation of the lungs or bronchial membrane.

Balsamum Peruvianum, L. M. Myroxylon Peruiferum, Linnæus, U. *Balsam of Peru; Liquid balsam of Myroxylon Peruiferum*, L.—*of Myroxylon Peruvianum*, D. *Fluid balsam of Incision of Myroxylon Peruiferum*, E.—A secies of the order of Peru, New Granada, and Columbia; belonging to the natural family *Amyrideæ*, and to the Linnæan class and order *Decandria Monogynia*.

[illegible]

P. P.—Balsam of Peru, as it occurs in English commerce, is a thick, semitransparent, heavy liquid, of a dark reddish brown colour. It has an agreeable, aromatic odour, and a warm, acrid taste. Sp. gr., about 1·100.

E. P.—According to the analysis of Frémy, it is composed of an oily matter, which by long natural exposure of cinnamein to the air is converted into benzoic acid of previous chemists, and one or more resins. When exposed to the air it becomes more dense, but does not dry up; it is inflammable, burning with a bright flame and much smoke, and diffusing a very agreeable odour. It is insoluble in cold water, but water boiled with it acquires its agreeable odour; it is soluble in alcohol in all proportions, but is only partially dissolved by [illegible].

Adulterations.—It is said to be adulterated with castor oil; this fraud is known by its low density, and by its being wholly dissolved when mixed with water.

Th. E.—Balsam of Peru is a mildly stimulating expectorant, and as such was at one time much employed in chronic bronchitis, in the advanced stages of phthisis, and in old pectoral complaints; it has, however, completely fallen into disuse as an internal remedy.

[illegible]

D. & M. or Ann.—Min. xx to xxx, suspended in aqueous vehicles by means of mucilage or yolk of egg.

Balsamum Tolutanum, L. E. Tolutifera balsamum, Penna, D. *Balsam of Tolu; Cabbage bark tree; Balsamo de Tolu; Balsamo colorado; Balsamo de Carthagena.* D.—*of Myrospylon Peruiferum*, L.—*of Myrospermum Toluiferum*, E.—Although the London College, on the authority of Ruiz, refers the balsams of Tolu and of Peru to the same tree, more recent observation has shown that they are from distinct species. The Myrospermum Toluiferum is a native of the mountainous districts of Tolu, Turbaco, and the neighbourhood of the River Magdalena; it belongs to the natural family *Amyrideæ*, and to the Linnæan class and order *Decandria Monogynia*.

P. P.—Usually similar to M. Peruvianum, except the leaves, when are strongly serrulated, and placed upon the petiole and sheath.

Fruit.—It consists of the capsule and seed, the former being made from the bark of the tree, and the latter sometimes exposed to the air.

P. P.—In solid masses of a resinous appearance, and a reddish-yellow colour. It has a peculiar, fragrant odour, more agreeable than the balsam of Peru, and a sweet, aromatic taste.

C. P.—Its composition is the same as that of the balsam of Peru. It becomes more solid by exposure to the air; it melts by heat, and is inflammable, burning with a *fuliginous* flame, and a very agreeable odour. It is soluble in alcohol and ether, and water dissolves out its fragrant acid.

 Us. E.—It is a stimulating expectorant, and, in consequence of its agreeable flavour, is very much used as an adjunct to pectoral mixtures; but it should not be employed when there is any inflammatory action present.

D. & M. or Ann.—Gr. v to gr. xxx.; it is best administered suspended in aqueous vehicles by means of mucilage or yolk of egg.—*Tinctura Balsami Tolutani*, D. L. *Tinctura Tolutana*, E. (Tolu balsam, ℥ij. (℥j., L.); proof spirit, by measure, ℥j. (℥ij., L. E.); digest (in a close vessel, D.) until the balsam is dissolved, and filter.) Dose, ℥ss to ℥j.; it is precipitated when added to water, but it may be suspended in water by means of mucilage or sugar.—*Syrupus Balsami Tolutani*, D. *Syrupus Tolutanus*, L. E. (Tincture of balsam of Tolu, ℥ij.; simple syrup, ℔iss. (℔j., E.); to the syrup recently made, and not altogether cooled, add the tincture by degrees, agitating briskly." D. E. "Balsam of Tolu, ℥ss; boiling water, Oj.; sugar, ℔iss.; boil the balsam in the water for half an hour in a vessel lightly covered, frequently stirring, and strain the cooled liquor; then add the sugar, and dissolve." L. Dose, ℥ss to ℥ss., merely as a flavouring adjunct. Tolu lozenges, prepared with the simple syrup and sufficient gum, are a popular and useful remedy in chronic coughs.

Terebinthina, L. E. Resina Resinis, Penna, D. *Resins.* The balsams. L.—*the resin.* D.—*Common balsamic resinifluous.* E.—*of Pinus Sylvestris.*—A mixture of Turpentine, Burgundy and Jews'; and a

ing to the natural family *Ebenaceæ*, and to the Linnæan [illegible] order *Decandria Monogynia*.

B. C.—A tall tree with [illegible]

Prep.—The [illegible]

P. P.—Benzoin occurs in large masses of a reddish-brown colour externally, with a waxy, somewhat shining fracture, [illegible] many whitish amygdaloid tears, connected together by a reddish substance; the interior [illegible] contain but few tears, and are of a more uniform reddish-brown colour all through. The French pharmacopœists describe another variety in tears of a pale yellow colour, but it is not met with in the English market. Benzoin has an agreeable, aromatic odour, and a sweet, balsamic taste; the odour and taste of the inferior qualities are much less agreeable. [illegible] about 1·065.

C. P.—It is composed of about 28 per cent. of resin soluble in ether, 50 of resin insoluble in ether, and about 20 of benzoic acid, with a trace of volatile oil, aromatic extract, &c. (Stenhouse.) It is permanent in the air; heated it fuses, and benzoic acid is sublimed; it is inflammable, burning with a fuliginous flame and an agreeable odour. It is soluble in alcohol, ether, and acetic acid; boiling water dissolves out the benzoic acid.

Th. E.—Benzoin is a stimulating expectorant, formerly much used in chronic cough, in old cases of bronchitis, and in the advanced stages of phthisis; in the present day it is not much employed. Like the other stimulating expectorants, it is inadmissible in inflammatory cases.

D. & M. or Adm.—It is not used in the solid state.—*Tinctura Benzoini* (*Benzoes*, D.) *comp.*, D. L. E. (Benzoin, [illegible] 3iv., E.); balsam. of Tolu (of Peru, L.), 3i. (3x., L.); [illegible] (storax, strained, 3ii. (3xx., L.), D. L.); aloes (succotrine), D. [illegible] balsam, L.), 3ss. (3v., L.); rectified spirit, *by measure*, [illegible] E.); digest for 7 (14, L.) days (pour off the clear liquor [illegible] strain.) A stimulating expectorant. Dose, 1ss. to [illegible] joined to pectoral mixtures; it is precipitated by water, but may be mixed with water by means of mucilage, yolk of egg, or [illegible]. This tincture was formerly much employed as an application to wounds and contusions, under the name of *Friar's Balsam*.

Inhalations (described in the division *Emetics*), although in small but frequently repeated doses, a fourth or a grain every grain, acts as an expectorant, but its effects as such are rarely manifested if nausea be at the same time produced. In some cases of chronic inflammation of the bronchial mucous membrane accompanied with profuse secretion, it increases the secretion not by promoting expectoration, but by diminishing the [illegible] and by some specific action restoring the parts to a healthy [illegible]. In some of these chronic diseases of the lungs in [illegible]

ipecacuanha, be prove how dead, must be given in doses sufficient to produce nausea, or even vomiting; but in chronic affections of the same parts, more advantage will be derived from smaller doses. As an expectorant, the dose of ipecacuanha and its preparations are as follows: In powder, gr. ½ to gr. ij.—*Vinum Ipecacuanhæ*, L. L. E. Min. x. to min. xl. *Syrupus Ipecacuanhæ*, E. 3i. to 3ij.—*Pilulæ Ipecacuanhæ comp.*, L. (Compound powder of ipecacuanha, 9ij.; squill, fresh dried, and scammony, of each, 3i.; mixture of treacle, q. s.; beat together till they are incorporated.) A useful stimulating expectorant in habitual cough affecting the old and debilitated. Dose, gr. v. three or four times a day. Every five grains contain about a fourth of a grain each of ipecacuanha and opium.

Lobelia, L. P. *Lobelia. Indian tobacco.* *The herb of Lobelia inflata.*—A native of North America, belonging to the natural family *Lobeliaceæ*, and to the Linnæan class and order *Pentandria Monogynia*.

P. U.—Annual, 1 to 2 feet high, with a branching stem; leaves scattered, lanceolate, oblong; flowers pale blue, in terminal racemes; capsules ovate, inflated.

P. U. & M. or Pract.—The entire herb is collected in the end of August, as soon as the capsules are formed, and carefully dried. It is imported from America compressed into rectangular masses, but prepared for exportation by the Shaking Quakers of New Lebanon, in the State of New-York.

P. P.—Its odour is faint, but disagreeable, and the taste at first insipid, but when chewed, very acrid, and resembling that of tobacco.

C. P.—According to Pereira, lobelia contains an acrid volatile oil, a peculiar acid, resin, chlorophylle, gum, extractive, &c. Cothran has announced the discovery of a new principle in the plant, which has been named *Lobelina*. It yields its active principles to water, alcohol, and ether.

Th. E.—Lobelia was employed by the native Indians of North America as an emetic, but its action as such is highly irritating and attended with much danger, for if it fails to vomit soon after having been taken, it produces all the symptoms of a powerful narcotico-acrid poison, and so small a quantity as a teaspoonful of the powdered leaves has proved in some instances fatal. In less doses it is, however, a most valuable sedative expectorant, apparently possessing a specific power in allaying spasm of the bronchial tubes. It is therefore employed with most benefit in paroxysmal diseases of the lungs, as in asthma and hooping-cough; it has also proved serviceable in the obstinate cough of chronic bronchitis, and in the latter stages of croup.

D. & M. or Ann.—Lobelia is seldom given in the form of powder; the dose, as an expectorant, is from gr. ½ to gr. x.—*Tinctura Lobeliæ*, E. (Dried lobelia, in moderately fine powder, 3vi.; proof spirit, Oj.; the tincture is best prepared by the process of percolation as directed for tincture of cardamom, but it may be also made by the usual way by digestion.) Dose, 3ss. to 3i.; larger doses may be given to produce vomit.—*Tinctura Lobeliæ Ætherea*, E. (Dried

leaves, in moderately fine powder, 3v ; spirit of sulphuric ether, Oij ; first prepared by percolation as directed for tincture of squill ; but it may be also obtained by digestion and subsequent expression, for 7 days). Dose, min. xx. to min. xl. The latter preparation is usually preferred in asthmatic cases as combining, with the sedative properties of the sulphuric ether.—Wholesale Formulæ. *Tincture of Lobelia.* (Dried capsules, 3vj ; rectified spirit, Oij ; spirit of nitric ether, Oiv. ; spirit of sulphuric ether, oz. j ; macerate for 14 days in a dark place, and filter.) This is the preparation of lobelia most generally employed in Great Britain. Dose, min. xx. to min. xl.

Marrubium vulgare, D. L. *White Horehound.*—An indigenous plant growing in waste places and by roadsides ; belonging to the natural family *Labiatæ*, and to the Linnæan class and order *Didynamia Gymnospermia*.

B. C.—About a foot and a half high, covered more or less with white down, the leaves of a roundish form, flowers small, white, in crowded whorls.

P. & C. P.—The whole plant has a peculiar, aromatic odour, and a very bitter, balsamic taste. Its properties depend upon the oil and extractive ; it also contains tannic acid ; it yields its virtues to boiling water and to alcohol.

To P.—White horehound was long held in high estimation as a pectoral expectorant. In the present day it is commonly employed as a domestic remedy in chronic coughs ; but it is scarcely ever used in regular practice. It is generally given in the form of infusion, *Horehound tea*, prepared by infusing 3ij of the herb in Oj of boiling water for an hour, of which the dose is 1oz. or 2oz. sweetened with sugar ; or in the form of confection, *Confect. Horehound*, prepared by evaporating a strong syrup of the herb to a pulp, a small bit of which is allowed to dissolve in the mouth frequently.

Scilla.—*Squill* (described in the division *Diuretics*), in small doses frequently repeated, promotes the secretion of the bronchial mucous membrane ; it is not, however, a stimulating expectorant, as is generally stated, and may therefore be prescribed in the acute and subacute stages of pulmonary affections as well as in the chronic. It proves more serviceable in the bronchitis and pneumonia of children than in the same diseases in adults. From the property which squill possesses of promoting the secretion of mucus, it facilitates expectoration in some forms of asthma and chronic bronchitis in which the secretions are viscid ; in these cases it is frequently combined with the more stimulating remedies of this class. The dose of powdered squill as an expectorant should not exceed gr. j, frequently repeated. The oxymel of squill is one of the most useful expectorants we possess for the pulmonary affections of children, in doses of min. x to min. xxx. [Squill is employed as an adjunct to pectoral mixtures in chronic pulmonary affections. Dose, min. x to min. xxx. *Pharm. Nostra.* Syrup of Squill, from dried and powdered bulb, 1 part to 8 parts of syrup.]

L. U. ammoniacum, powdered, ʒij.; hard soap, ʒij.; mix the powders together, add the soap, and, with sufficient treacle (syrup, L.), beat to a proper consistence.)—*Pilulæ Scillæ*, L. (Squill, in fine powder, 5 parts; ammoniacum, ginger, in fine powder, and Spanish soap, of each, 4 parts; treacle of red roses, 5 parts; mix the powders, add the other articles, beat them into a uniform mass, and divide it into five-grain pills.) Dose, gr. v. to gr. xx., in chronic catarrh and asthma. It spoils by keeping.

Genus, L. E. Polygala senega, Lamb. D. *Senaka. Virginian snakeroot. Root of Polygala Senega.*—A native of the United States, belonging to the natural family *Polygaleæ*, and to the Linnæan class and order *Diadelphia Octandria.*

B. C.—Root perennial, some inches long, about one or two lines in diameter, horizontal, knotty, branched; fibres numerous, white, as under surface; upper part erect, simple, cylindrical, terminating in a small bluish scale.

P. P.—Root about the thickness of a writing pen, contorted, knotty, marked with slight crenatures on one side; central portion woody, grayish or yellowish externally, whitish internally; external portion (*medullium*) whitish, woody, inert. The root has a faint, peculiar odour, and a taste at first mucilaginous, afterward nauseous and acrid.

C. P.—It is composed of tannic and pectic acids, wax, fixed oil, gum, albumen, colouring matter, lignin, some salts, and a peculiar acrid principle, which, according to Quevenne, consists of two volatile acids, named by him *Polygalic* and *Virginic* acids. It yields its active principle to both water and to alcohol; according to some recent observations, it appears that, by the action of boiling water on the root, the active principle is formed into an insoluble compound with the colouring matter and albumen; therefore the Edinburgh College has substituted an infusion for the decoction of the other pharmacopœias.

Th. E.—Senaka root is a stimulating expectorant of much power, peculiarly fitted for the advanced stages of chronic bronchitis and of pneumonia, especially when occurring in the aged and debilitated. It is also a very valuable remedy in protracted hooping-cough, and in the latter stages of croup and of bronchitis in infants and children.

D. & M. or Ann.—In powder, gr. x. to ʒss.; this is the best form for the administration of senaka in the pulmonary affections of children.—*Decoctum Senegæ*, D. L. (Senaka, ʒiij. (Dr., L.); water (distilled, L.), Oss. (O.j., L.); boil down to ʒviij. (Oj., L.), and strain.) A bad form, for the remedy stated above.—*Infusum Senegæ*, E. (Senaka, ʒss.; boiling water, Oj.; infuse for four hours in a covered vessel, and strain.) An excellent vehicle for other remedies in old cases of catarrh and bronchitis. Dose, ʒij. to ʒiij.

D. C. & P.—*Syrup of Senaka.* Take of senaka, bruised, 4 ounces; water, a pint; sugar, a pound. Boil the water with the senaka to one half and strain, then add the sugar, and proceed in the manner directed for syrup.)

STYRAX, L. E. STYRAX OFFICINALE, HERM. D. *Storax*, Ed. D.—*Balsamic exudation*. L. E.—*of Styrax officinale*.—A native of the Levant, Palestine, Arabia, and cultivated in the South of Europe: it belongs to the natural family *Ebenaceæ*, and to the Linnæan class and order *Decandria Monogynia*.

B. C.—Stem 15 to 25 feet high, branching at the top: leaves alternate, oval, villous beneath: flowers white, in small racemes: fruit a coriaceous capsule, downy, one-seeded.

PREP.—The process followed for obtaining storax from the tree is not accurately known, but it is supposed to be procured from incisions made into the tree, or from the punctures of insects.

P. P.—A great many varieties of storax have been described by pharmacologists; two are most generally met with: 1. *Liquid storax*; of this I have met with two sorts: one, a grayish substance of the consistence of bird-lime, with a strong naphtha odour; it acquires a dirty brown colour on exposure to the air; the other, a shining black, very viscid liquid, becoming more fluid when heated, with a very agreeable, aromatic odour: both sorts have a pungent, balsamic taste. 2. *Common storax*; this is in very friable, reddish brown masses, with an agreeable, aromatic odour, and a warm, somewhat acrid taste; it appears to be sawdust cemented together by some liquid resin.

C. P.—The medicinal virtues of storax depend on the presence of volatile oil, benzoic acid, and resinous extractive. It yields its properties to alcohol, but merely its fragrancy to boiling water.

Adulterations.—No accurate account could be given of the adulterations of storax, so many different substances are sold under that name. The gray liquid storax is manifestly some compound of impure naphtha.

Th. E.—Formerly employed as an expectorant in the same cases as benzoin; in the present day it is only used as an ingredient in the *Pilulæ Styracis*, to conceal the odour and taste of opium.

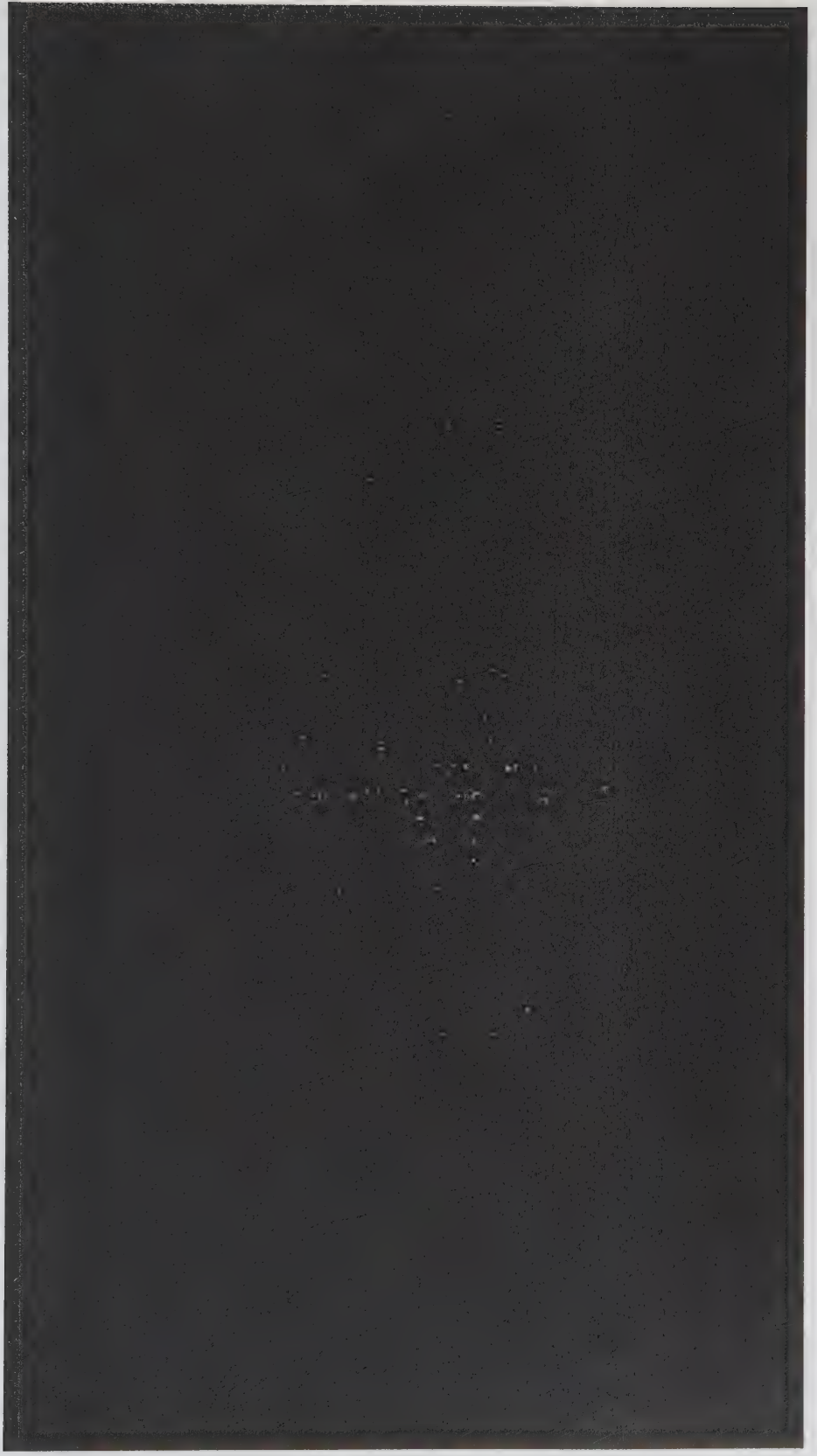
PHARM. PREP.—*Styrax colatus*, L. *Extractum Styracis*, E. (Dissolve storax in (by boiling in successive quantities of, E.) rectified spirit, and strain; distil off the spirit, and evaporate with a gentle heat (over the vapour-bath, E.) to a proper consistence, L.; the consistence of a thin extract, E.) Only used in the above-mentioned preparation.

CHAPTER XV.

NARCOTICS.

(Anodynes—Hypnotics—Soporifics.)

NARCOTICS may be defined medicines which produce a primary stimulating effect on the nervous and vascular systems, but which is soon followed by a depression of the vital powers and if a large quantity of the substance be swallowed, coma. The stage, that of excitement, varies much both as to the



dose of any *narcotic* may be so regulated as to be a [illegible] and, on the contrary, the dose of a *stimulant* [illegible] as to become a *narcotic*, *sedative*, [illegible] the philosophic student will strongly incline to the opinion that these reputed divisions are only modifications [illegible] therapeutic agents; and that, however they may be [illegible] recommended by those who have a passion for minute and [illegible] distinctions, they are wholly theoretical. Like the arrangement of the body into regions or systems, for the convenience of study and the facility of memorizing, they are not to be [illegible] with accuracy or truth. Still, however, he must be a bold adventurer in this department who will hazard his reputation by proposing the reform so much needed, and reducing the [illegible] classes in the Materia Medica within the narrow limits [illegible] by facts, as contra-distinguished from theory. As the author of this work has wisely ventured to think for himself, and departed from the beaten track on some peculiarities of his [illegible] much to be regretted that he did not go a step further, and [illegible] the number of his divisions, by rejecting both the name and the thing, when he felt, as he appears in some cases to have done, that there are distinctions without differences, and which have no claim to respect other than that of antiquity.]

Belladonna, L. E. Atropa belladonna, root (P. L. E. D.) and *Leaves (and root,* D.) of *Atropa belladonna*. *Deadly nightshade*. An indigenous plant, belonging to the natural family Solanaceæ and to the Linnæan class and order *Pentandria Monogynia*.

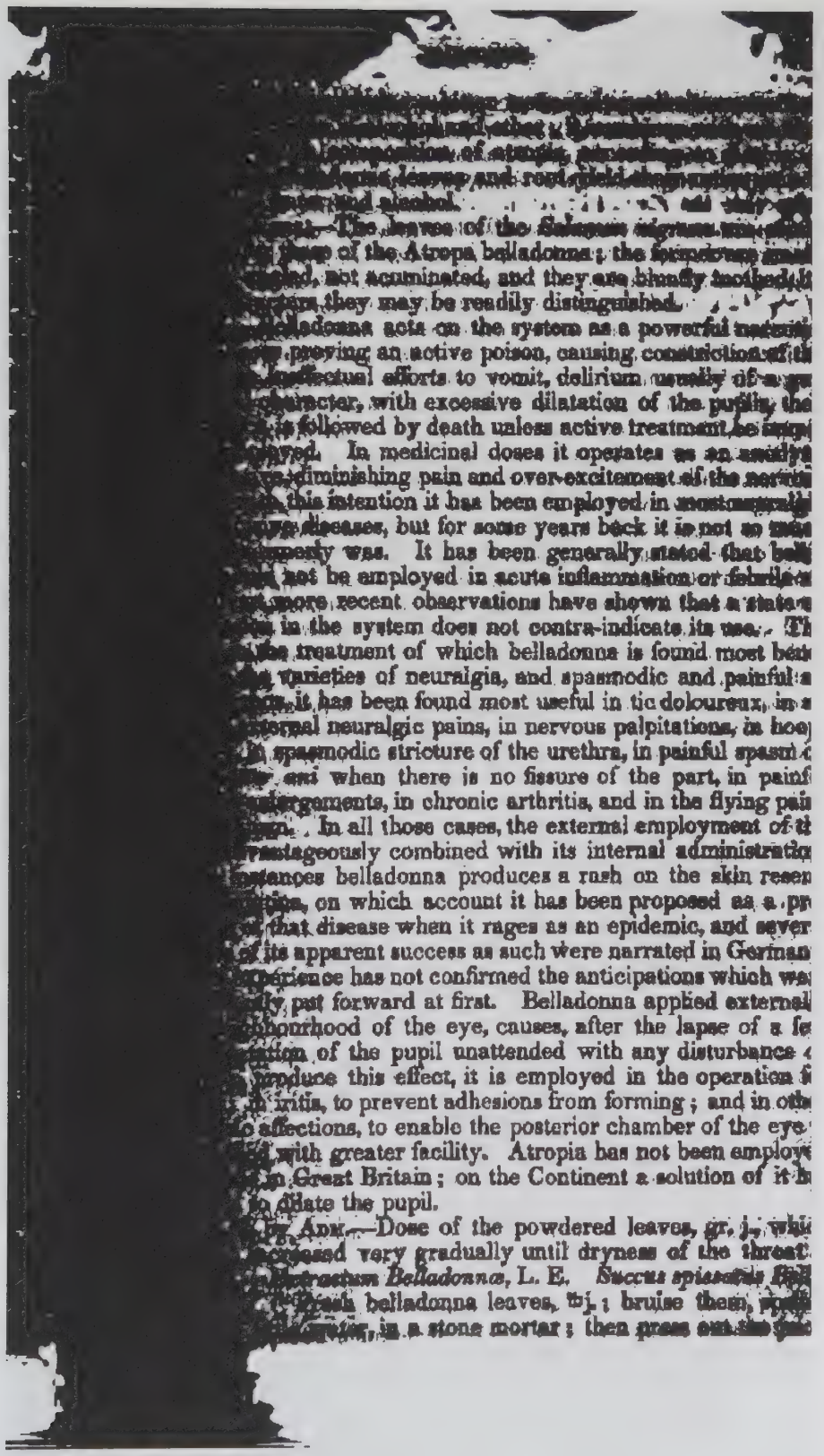
[illegible]

P. L.—Root fleshy, creeping, about 3 to 4 feet long, [illegible] sweet, rather nauseous, some very large ones placed in [illegible] cautery an elegant poisonous ornament, bear purple [illegible] oblong, black, about the size of a [illegible] cherry, filled with a [illegible] are numerous [illegible] kidney-shaped seeds.

P. E. & M.—Leaves of the root, which is considered only as the [illegible] season is scarcely over (root at present), it should be [illegible] and dried quickly. The leaves are gathered in June and [illegible] crushed, and dried with a stove heat.

P. P.—Belladonna root is from one to two inches in [illegible] and a foot or more in length; it is of a grayish-white colour externally; grayish-yellow internally; it has a faint, nauseous odour, a slightly astringent, bitter taste. The leaves, when fresh, are of a sombre-green colour, which becomes yellowish-green in drying; they have a feeble odour, and an herbaceous, somewhat bitter taste.

C. P.—The medicinal properties of belladonna depend on [illegible] peculiar principle which has been named *atropine*. It was first discovered by M. Brandes in the leaves, in which it is found in combination with malic acid, two nitrogenous substances called by him *hyoscyamine* and *daturine*, gum, resin, starch, albumen, ligneous [illegible] &c. &c. [illegible] It is inodorous, colourless, [illegible]



and evaporate it over steam to a proper consistence. The [illegible] belladonna, any quantity; [illegible] a gentle pressure [illegible] form pulp; express the juice; [illegible] and express again. Taste the expressed liquor, then evaporate the filtered liquid in the evaporating dish, to the consistence of firm extract, stirring constantly towards the close. [illegible] gr. ss., gradually increased to gr. ij. or gr. iij. [illegible] stem generally employed to dilate the pupil, by which purpose it is applied around the eye, in spasm of the muscles, paralysis, [illegible] alterations of an instrument, the epilepsy has been [illegible] extract of belladonna. It has been applied to the ear when [illegible] tracted labour caused by rigidity.—*Emplastrum Belladonnæ* [illegible] E. "Incrassated juice of belladonna, ℥j.; soap plaster, [illegible] a plaster." D. "Resin plaster, ℥iij.; extract of belladonna, [illegible] add the extract to the plaster, melted by the heat of a [illegible] [with a gentle heat, L.], and mix them." L. E.] An excellent application over the sternum in dysmenorrhœa, and for the relief of neuralgic and other pains.—*Unguentum Belladonnæ* [illegible] tract of belladonna, ℥j.; axunge, ℥j.; mix.] In painful affections, rheumatic affections, in chlorosis, and in neuralgia.—*Succus Belladonnæ.* (Prepared by expressing the fresh leaves collected in the beginning of July, setting aside the expressed juice for 48 hours, and adding to the clear decanted liquor a fifth part of rectified spirit.) Dose, min. xx. to xxx. xl., gradually increased.—*Tinctura Belladonnæ*, Brande. (Extract of belladonna, ʒx.; proof spirit, f℥xx.; macerate for 14 days, and strain.) Dose, xxx. to xl. It has been added to f℥viij. of liquid has been used as a lotion.

In poisoning with belladonna, stimulating enemata, followed by active cathartics should be employed, with cold applications to the head; and if coma be present, ammonia should be administered, and the usual external stimulants applied.

Cannabis Indica. *Indian Hemp.* [*Apocynum Cannabinum*, L. S. P.]—According to the most recent observations, it appear that the Indian hemp is precisely identical in botanical characters with the common hemp of Great Britain, the *Cannabis sativa*, differing only in the secretion of a resin with which it is covered, which is totally absent in the European kind. It grows in India and Persia, and belongs to the natural family *Urticeæ*, and to the Linnæan class and order *Diœcia Pentandria*. [Indigenous in the United States.]

[illegible] annual plant, 3 feet high; stem branching, pubescent [illegible] glandular at upwards, thyrsus, [illegible] long, erect, panicled; [illegible] ovalous, deeply serrated; flowers directed, [illegible] one another.

P. U. S. & M. de Paris.—The dried part [illegible] plant is to flower, and [illegible] in the act [illegible] to remove the leaves; it is called [illegible] [illegible] [illegible]

observe the leaflets which it represents with, and that many is portrayed on the sides of which pointed."—(*Pharmacographia.*)

P. P.—*Gunjah* is sold in bundles about two feet long and three inches in diameter; it consists of the stems with the leaves and flowers pressed together by the resinous exudation; it is of a dark-green colour, and has an agreeable, narcotic odour (as met with in Great Britain, however, the odour is feeble), and a bitter taste, resembling that of tobacco. *Charras* is a hard resin, of a blackish-grey colour, a fragrant, narcotic odour, and a bitterish, acrid, slightly warm taste; it is not generally met with in Great Britain. The leaves and capsules without the stalks are sold in India under the name of *Bang*, *Subjee*, or *Sidhee*; they have been also imported into Britain, but their medicinal property is very low; they should not, therefore, be employed in the preparation of the extract or tincture.

C. P.—The medicinal virtues of the Indian hemp are due to the resin which it contains, and which has been named *cannabin*; it also contains a small quantity of volatile oil, which has not been examined. The dried plant yields to alcohol about 20 per cent. of resinous extract, which is of a dark reddish-brown colour; has a rather fragrant, narcotic odour, resembling that of *Cascarilla bonplandiana*, and a bitter, somewhat acrid taste.

Adulterations.—Several specimens of the extract of Indian hemp which I have met with did not possess the peculiar odour or taste of the extract as prepared by myself; whether this arose from faulty preparation, or the substitution of some other substance, I cannot say. The true extract is readily known by its peculiar odour and taste.

Th. P.—Although the Indian hemp has been used in Persia, and throughout India, for many hundred years, for producing inebriation, and also as a medicinal agent, it has been only very recently introduced into British medicine, through the exertions of Dr. O'Shaughnessy, late of Calcutta; consequently, the observations made on its medicinal virtues have been as yet very limited. In its action on the system it is decidedly narcotic, producing at first the effects of a powerful stimulant, which, if the dose taken be sufficiently large, are soon followed by those of a direct sedative. The preparations of the Indian hemp have been chiefly employed in the treatment of neuralgic and painful affections, in most of which they have proved very beneficial. Thus they have been given in tetanus, hydrophobia, infantile convulsions, sciatica, chorea, neuralgic pains, and chronic rheumatism; they have also been used to relieve sleeplessness or disturbed rest, provided it does not arise from inflammation in the head. All who have tried the effects of this remedy in the British Isles, have come to the conclusion that the Indian hemp must be given in much larger doses in Great Britain than in the East, and since his return home, this has been acknowledged by Dr. O'Shaughnessy himself. The trials made with it in the diseases above enumerated would seem to show that the Cannabis Indica may be used with benefit as a substitute for opium

it does its whole use may be marred from idiosyncrasy or by some other cause: but I will commonly succeed in allaying spasmodic or neuralgic pain, where this agent only fails in consequence of its stimulating properties, the use of the hemlock is a valuable substitute in most inflammatory diseases.

L. & M. Form.—The preparations of this drug which are present in use are the powder, extract, and a tincture: they are contained in the London Catalogue. Take of the dried flowering tops of the plant any quantity: recently expressed juice, a sufficiency: mix the juice with the resin in the water bath, and let the whole evaporate in the heat of a vapour-bath, that it may become of a proper consistence. Dose, gr. x to gr. xx, gradually increased until a tendency to coma is produced; gr. xx to gr. xl is the dose usually given in the East, and the quantity frequently reaches a grain and even more. It is best given in the form of Extractum Cicutæ Concretum (Squire). (Extract of hemlock juice, or any good spirituous extract.) Dose, ℈ij to ℈iij, frequently repeated until the desired effect is produced. This tincture is decomposed by water, the resin being precipitated in the form of a pale yellow powder. It should, therefore, be suspended in aqueous vehicles by means of mucilage, syrup, or yolk of egg.

HYOSCYAMUS. L. HYOSCYAMUS NIGER, FOLIA (ET SEMINA, L.), E. L. "HYOSCYAMI FOLIA. U. S. P." *Henbane: the leaves (and seeds,* L.) "*Hyoscyamus niger*."—An indigenous plant belonging to the natural family Solanaceæ, and to the Linnæan class and order *Pentandria Monogynia*.

[illegible]—The leaves of the biennial plant should be preferred; they are to be gathered when the plant is in full flower, and dried quickly at a temperature not above 120°. The seeds are only ordered in the London Pharm.; they should be carefully picked from the husk.

P. P.—Hyoscyamus leaves, when carefully dried, are of a greenish-yellow colour, have a clammy feel, a fetid narcotic odour, and a bitter, nauseous taste: in the fresh state, the odour and taste are both more powerful, and the colour is dull green. The seeds are ovoid, compressed, rough, of a dirty-yellow colour; they have a feeble narcotic odour, and a bitter, somewhat acrid taste.

C. P.—Hyoscyamus leaves contain a narcotic extractive soluble in water and alcohol, bitter extractive, gummy extractive, and salts of magnesia (Lindberger). M. Brandes announced the discovery of a vegetable alkali, which he named *hyoscyamia*, in the leaves and seeds of the Hyoscyamus niger, but his statements have not been confirmed by more recent experiments. Runge has, however, showed that this was owing to the employment of a caustic alkali to separate it; and by using magnesia for this purpose obtained vegetable alkalies from belladonna, henbane, and

Products, the three of which resemble each other so closely, that there is reason for believing that they are identical. According to the analysis of Kirchoff, the seeds consist of 25·2 per cent. of volatile and extractive matters, 12·9 per cent. of fixed oil with some resin, 2·2 per cent. of extractive, with sugar, gum, lignin, albumen, and some salts. The leaves and seeds of the henbane impart their virtues to water, alcohol, ether, and the fixed and volatile oils.

Adulterations.—The admixture of any other leaves with those of the Hyoscyamus niger may be readily detected by their physical properties. The leaves lose much of their activity by keeping; they should, therefore, be gathered every year. When henbane is badly preserved, the odour and taste are very feeble.

Tr. V.—Taken in large quantity, every part of this plant acts as a powerful hyoscyamic-acrid poison, producing delirium, followed by stupor with marked dilatation of the pupil, which, if active treatment be not immediately employed, is the precursor of death. In medicinal doses, its operation is narcotic, but it is distinguished from most other medicines of this class by several peculiarities. Thus, the preliminary or stimulant stage of its operation, even when taken in small doses frequently repeated, is very slight, often not at all discernible; and in the second stage of its operation, it causes sleep rather by lessening excitability and allaying pain than by any direct action on the nervous system; under its continued use, the bowels are gently acted on, and do not become constipated, as occurs when opium is taken. In consequence of these properties, hyoscyamus is employed with much advantage in many painful diseases in which the use of opium is objectionable from any circumstance. It is especially found beneficial in sleeplessness or excitability, when the symptoms of pyrexia, as hot skin, thirst, delirium, &c., are present: in all forms of neuralgic and spasmodic affections where there is great excitability of the nervous system, and in which the stimulating effects of opium would prove injurious; in irritation of the bronchial mucous membrane causing cough, and in diseases of the urinary organs. There are, however, many persons in whom hyoscyamus will produce great excitement, headache, and even delirium; and in such its use should be carefully avoided. Externally, fomentations or cataplasms of hyoscyamus are employed to diminish pain in glandular enlargements, painful ulcerations, hæmorrhoidal affections, &c. Given in combination with active cathartics, it corrects their griping qualities without diminishing their activity.

D. & M. ut Ante.—In powder, the leaves may be given in doses of gr. v. to gr. x.; of the seeds in doses of gr. ij. to gr. viij.; the following preparations, however, are generally employed: *Extractum Hyoscyami*, L. E. *Succus spissatus Hyoscyami*, D. (“Prepared in the same manner as the similar preparations of belladonna.” D. L. “To be prepared by any of the processes directed for extract of conium.” E.) The continued suspection by lead to which this extract is subjected, when prepared according to the formula of the Dublin and London Colleges, impairs its activity: prepared

according to the Edinburgh Pharmacopœia. It is much more powerful. Dose, gr. v to gr. xv, given in the form of pill.—*Tinctura Hyoscyami*, D. L. E. (Hyoscyamus leaves, dried (and in coarse powder, E.), 3vi; proof spirit, Oij. (Oj. L. E.): digest (macerate, L.) for 7 (14, L.) days, and strain. "It is best prepared by the process of percolation, as directed for tincture of opium." E.) Dose, fss. to fj.—*Succus Hyoscyami*. (Fresh leaves of the plant, any quantity: express the juice with a powerful press, set aside for 48 hours, pour off the clear supernatant liquor, and add to it a fifth part of rectified spirit.) This is the best preparation of henbane. Dose, min. xx. to min. xl.

In poisoning with hyoscyamus, stimulating emetics and the stomach pump should be immediately employed, to be followed by external and internal stimulants, and afterward bloodletting. Several cases of poisoning with henbane have been recently published in one of the Italian journals, in which lemon juice in large quantity proved a complete antidote.

LACTUCARIUM, L. E. LACTUCA SATIVA, HERBA, D. LACTUCA VIROSA, FOLIA, D. *Lactucarium. Lettuce opium. The inspissated juice of Lactuca sativa*, L.—*of Lactuca sativa and Lactuca virosa*, E. *The herb of Lactuca sativa, and the leaves of Lactuca virosa*, D.—Both these species of Lactuca belong to the natural order Cichoraceæ, and to the Linnæan class and order Syngenesia Æqualis. The former, though extensively cultivated in the British islands, is originally introduced probably from the East: the latter is indigenous.

E. [illegible] is an annual, with erect, smooth, cylindrical, branching stem, 3 to 4 feet high; leaves pinnated or sessile, more or less wrinkled, commonly standing at the base, of a pale green colour; flowers pale yellow, small, in terminal panicles. L. virosa is a biennial; stem erect, prickly, 3 to 5 feet high; leaves oblong, pinnatifid, sinking, toothed, sessile and amplexicaul at the base, very prickly; flowers small, yellow, in panicles.

E. L. & D. *as Drugs.*—In order to obtain the flowering stem of either of these plants, as it proceeds in a white milky juice, which dries and hardens rapidly, this must be done before spontaneously, sometimes between 8 or 9 in the morning of the succeeding head before the flowers expand, collecting the exuding juice which exudes, and removing a fresh slice of the stem as long as it yields a white juice. The recent investigations of Mr. Duncan, of Edinburgh, have shown that the virosa yields more than twice as much lactucarium as the garden lettuce. The leaf is said to yield also a narcotic.

E. D.—It is met with in large, roundish, rough masses, of an olive brown colour; it has a narcotic odour, which closely resembles that of opium, and a disagreeable, bitter taste.

E.—Lactucarium consists of a peculiar neutral bitter principle, which has been named *Lactucin*, a volatile oil, a yellowish resin, a greenish-yellow, acrid resin, crystallizable acid (the acetic acid), gum, pectic acid, a brown basic substance, a crystallizable sugar, gum, pectic acid, a brown basic substance, a crystallizable sugar, gum, pectic acid, a brown basic substance, a crystallizable sugar,

[illegible] operation [illegible] [illegible] suspected, but it [illegible] [illegible] may be employed as a substitute for [illegible] stimulant effect is objectionable. [illegible] operation, and in many persons, even when [illegible] times, does not produce any effect. It has been [illegible] as an anodyne in phthisis, but when [illegible] used for even a comparatively short period, I have found powers of producing rest, although the quantity [illegible] increased. Lactucarium has also been employed [illegible] febrile and inflammatory affections, in rheumatism, [illegible] in nervous disorders, where opium is contra-indicated [illegible]

Dose.—Gr. v. to gr. xx., in the form of pill.—*Tinctura Lactucarii*, E. (Lactucarium, in fine powder, ʒij.; proof spirit, fʒxij. Tincture is best made by percolation as directed for the [illegible], but may also be prepared by digestion with occasional agitation.) Dose, fʒi. to fʒij. Every fluid drachm of this tincture contains gr. vj. of lactucarium.—*Trochisci Lactucarii*, E. (Lactucarium, to be prepared with lactucarium, in the same proportion, and in the same way as opium lozenges.) Dose, ʒi. to ʒij. Each lozenge of ten grains contains nearly one seventh of its weight of lactucarium.—*Extractum Lactucæ*, L. (Fresh lettuce leaves, bruised in a stone mortar, sprinkled with a little water, in a stone mortar, and press out the juice, and evaporate it, unstrained, to a proper consistence.) A bad preparation, sometimes substituted for the tincture, from which it may be known by its greater compactness and very feeble odour. Dose, ʒi. to ʒi.

U. S. E. Humulus lupulus, strobili siccati, D. *Hops. Strobiles* (*Cathins*, E.) *of Humulus lupulus*.—Scarcely [illegible] probably introduced from Holland; it belongs to the [illegible] *Urticaceæ*, and to the Linnæan class and order *Dioecia Pentandria*.

[illegible] long, weak, and climbing, scabrous; leaves petiolate, 3 to 5 lobed, [illegible] rough; flowers greenish-yellow.

Part.—The aggregated fruits, *cathins* or *strobiles*, when dried, [illegible] of commerce; they are gathered and picked in September, and [illegible]

Hops occur in the form of thin, papery, greenish-yellow [illegible] finely veined, and sprinkled with a golden-yellow powder. [illegible] a peculiar aromatic odour, and an aromatic, very [illegible]

The principal virtue of hops is due to the yellow powder, [illegible] called *lupulin*; it constitutes about a sixth part of [illegible] may be readily obtained in a separate state by rubbing [illegible] The scales are composed of astringent matter, [illegible] leather, chlorophylle, gum, lignin, and salts of potash

and lupulin, with some adhering *lupuline* (Payen and Chevallier). Lupulin is in the form of a coarse yellow powder, of a reddish tinge; it consists of 2 per cent. of volatile oil, 1·75 of bitter principle (*lupuline*), 50 to 55 of resin, 32 of lignin, &c. Hops and lupulin yield their active properties to both water and alcohol.

T. L.—Much difference of opinion exists as to the therapeutical properties of hops; they are generally stated to be narcotic, but from the experiments made with them by Magendie and others on animals, it would appear that this effect is not produced when they are given internally, no matter how large the dose. Now, however, the inhalation of the aroma of hops acts decidedly narcotically, frequently producing sleep in the restlessness and wakefulness of mania and other nervous affections, when opium and other narcotics have completely failed. To produce this effect, a pillow filled with hops is generally employed. The solution of the bitter principle of the hop in malt liquors serves to make them keep better, and also confers on them aromatic and tonic properties.

D. A. M. or Anv.—*Lupulin*, gr. v. to gr. xij., in powder or pill. If the hop possess any narcotic property, it must be contained in the lupulinous, as in it alone is centred all the aroma.—*Extractum Humuli*, D. *Extractum Lupuli*, L. E. ("Prepared as the other vegetable extracts," D. "As the extract of logwood," E. "Hops, one pound; boiling distilled water, one gallon; macerate for 24 hours; then boil down to a gallon, and strain the liquor while yet hot; lastly, evaporate to a proper consistence," L.) Dose, gr. v. to gr. xx.—*Tinctura Lupuli*, L. (Hops, 3vj; boiling distilled water, Oj; macerate for 4 hours in a vessel lightly covered, and strain; add bitter, very feebly, if at all narcotic. Dose, fʒj. to fʒij.—*Tinctura Humuli*, D. *Tinctura Lupuli*, L. E. ("Hops, 3v. (3iv., L.); proof spirit, Oij. (Oj., L.); macerate for 14 days (frequently shaking, D.), and strain," D. L. "Take any convenient quantity of hops recently dried, separate by friction, and sifting the yellowish lupuline powder attached to their scales; then take of this powder, and of rectified spirit (vol.), and prepare the tincture by percolation or digestion, as directed for tincture of capsicum," E. Dose, fʒss to fʒj).

Magnesia, L. Magnesia. *A peculiar principle, on which to account for a variety of opinions cited by Aristotle.*

and lime, with some adhering *lupulin* (Perrot and Chevallier). Lupulin is in the form of a coarse yellow powder, of a [illegible] taste; it consists of 2 per cent. of volatile oil, 10·3 of bitter principle (*lupulin*), 50 to 55 of resin, 12 of lignin, &c. The [illegible] in yield their active properties to both water and alcohol.

Uses.—Much difference of opinion exists as to the [illegible] properties of hops; they are generally stated to [illegible] but, from the experiments made with them by Magendie and [illegible] on animals, it would appear that this effect is not manifested [illegible] are given internally, no matter how large the dose; [illegible] the hop, the inhalation of the aroma of hops acts decidedly [illegible] frequently producing sleep in the restlessness and wakefulness [illegible] nausea and other nervous affections, when opium and other [illegible] have completely failed. To produce this effect a pillow filled with hops is generally employed. The solution of the bitter principle of the hop in malt liquors serves to make them keep well, and also confers on them aromatic and tonic properties.

D. & M. or Add.—*Lupulin*, gr. v. to gr. xx.; in pills. As [illegible] if the hop possess any narcotic property, it must be contained in this substance, as in it alone is centred all the aroma. *Extractum Humuli*, D. *Extractum Lupuli*, L. E. ("Prepare the simpler extracts," D. "As the extract of logwood." E.) Dose, gr. x. to 3ss.; boiling distilled water, cong. j.; macerate for 24 hours, boil down to a gallon, and strain the liquor while yet hot, and evaporate to a proper consistence," L.) Dose, gr. x. to 3ss. *Infusum Lupuli*, L. (Hops, 3ij.; boiling distilled water, Oj.; macerate for 4 hours in a vessel lightly covered, and strain. A mild tonic, very feebly, if at all narcotic. Dose, f3j. to f3iv.) *Tinctura Humuli*, D. *Tinctura Lupuli*, L. E. ("Hops, 3iv. (3iij. L.); proof spirit, Oij. (Oj., L.); macerate for 14 days, frequently shaking, D.; and strain." D. L. "Take any convenient quantity of hops recently dried, separate by friction, and shake from them the lupuline powder attached to their scales; then take of the lupuline so obtained, and of rectified spirit [illegible], and prepare the tincture by solution or digestion, as directed for Tincture of [illegible]." E.) Dose, f3ss. to f3ij.

Morphia, L. *Morphia*. "A peculiar principle, on which [illegible] diffusible activity of opium chiefly depends.

Pharm. *Lond.* "Hydrochlorate of morphia, [illegible] dissolved in distilled water, Oj.; add the hydrochlorate of morphia [illegible] water, to the solution of acetate add an excess of [illegible] which must be thrown down with distilled water, and [illegible] a proper [illegible] of morphia is found. [illegible] the precipitate [illegible] water [illegible] and strain. [illegible] and dry. [illegible]

[illegible] Uses, &c. [illegible] solution of morphia is found [illegible] water [illegible] and strain. [illegible] and dry. [illegible]

P. P.—Thus obtained, morphia is in the form of a white crystalline powder, the crystals being very minute; but by solution in boiling alcohol and slow evaporation, they may be obtained much larger; their primary form is the right rhombic prism. They are inodorous, but have a sensibly bitter taste.

U. P.—It consists of $C^{34}H^{19}O^{6}N$. It is permanent in the air, it is fused by heat, and by a high temperature it is decomposed. It is inflammable, burning with a bright flame and a peculiar odour, and leaving a carbonaceous residuum. It requires 1000 parts of water to dissolve it, the solution possessing an alkaline action; it is scarcely soluble in ether, but dissolves in 40 times its weight of cold and in 30 times its weight of boiling alcohol; it is very soluble in solution of caustic potash, lime-water, or ammonia. The best characteristic of morphia and its salts is the property which they possess of striking a deep blue colour with the solution of a per-salt of iron made as nearly neutral as possible.

Ta. P.—Morphia, on account of its insolubility, is not used as medicine; its therapeutical effects, therefore, will be more conveniently considered when treating of the muriate of morphia, the most frequently employed of its salts. The dose of the pure alkaloid is said to be from one fourth to one half of a grain, in the form of pill.

Morphiæ acetas, L. E. *Acetate of Morphia.*

[illegible] "Morphiæ [illegible] ; acetic acid, fl[illegible] ; distilled water, two ; rub the acid with water, and [illegible] upon the morphia in succession. Let the [illegible] evaporate with a gentle heat, that crystals may be formed." Edin. "Morphiæ et morphiæ sulphuretum quantum." Dissolve it in 24 times its weight of warm water, and when the solution is cold, add acetic [illegible] gradually, and with constant agitation, until there is a permanent but faint odour of acetone in the fluid. Lastly, the precipitate is to be [illegible] with cold water, and dissolved in the smallest [illegible] of a slight excess of pyroligneous acid in 12 parts of water. [illegible] the whole into vapour bath, and set it aside to crystallize. Dry and preserve the crystals, and dry them with a gentle heat. More soluble [illegible] may be obtained by [illegible] the mother-liquor.

U. S. P.—Morphia, in powder, freed from moisture by boiling with [illegible] water, two ; distilled water, half a pint ; acetic acid, a sufficient quantity. Mix the morphia with the water, then carefully drop in the acid, constantly stirring, until the morphia is saturated and dissolved. Evaporate the solution by the water-bath to the consistence of a syrup. Lastly, dry the acetate with a gentle heat, and rub it into powder.]

P. P.—As usually met with, acetate of morphia is a greyish-white powder, sometimes obscurely crystalline; when pure, however, it is snow-white, and in distinct crystals. It is inodorous, but when moistened emits a feeble odour of acetic acid; its taste is decidedly bitter.

U. P.—It is composed of one eq. of acetic acid and one of morphia. Exposed to the air, it loses a portion of its acid, and then is partially insoluble in water; by heat it is decomposed, and distilled over [illegible] vapour. Acetate of morphia is very soluble in water and in alcohol. When the base is not completely saturated with acid, its solution in water may be readily accomplished by adding a few drops of acetic acid.

[illegible] them of the muriate next to be described, [illegible] should be always preferred, as it is more easily pu[illegible] and is generally more pure.

Incompatibles.—The stronger acids; the alkalies, and alkal[illegible] and most earthy and metallic salts.

[illegible] MORPHIA, E. MORPHIÆ HYDROCHLORAS, L. [illegible]; *Hydrochlorate of Morphia.*

[illegible]—Lond. "Take of opium, sliced, ℔j; crystals of chloride [illegible]; purified animal charcoal, three; hydrochloric acid, [illegible] of ammonia, each, as much as may be sufficient: macerate [illegible] distilled water for 36 hours, and bruise it, afterward digest [illegible] and press it. Macerate what remains again and a third time [illegible] bruise five from taste, and as often bruise and press it. Evap[illegible] gently, with a heat of 140°, to the consistence of a strup. The [illegible] water, and when the impurities have subsided, pour off the [illegible] Gradually add to this ℥ij of chloride of lead, or as much as [illegible] just dissolved in ℔xv of boiling distilled water, till nothing far[illegible] Pour off the liquor, and wash what remains frequently with [illegible] evaporate the mixed liquors as before, with a gentle heat, thro[illegible] cool. Press these in a cloth, dissolve them in a pint of [illegible] with two of animal charcoal, in a heat of 120°, and strain [illegible] being thoroughly washed, evaporate the liquors cautiously, t[illegible] be produced. To the liquor poured off from the crystals [illegible] mixed with a pint of water, gradually drop in as much solu[illegible] frequently shaking it, as may be sufficient to precipitate all the [illegible] washed with distilled water, add hydrochloric acid, that it may [illegible] digest it with ℥ij of animal charcoal, and strain. Last[illegible] being thoroughly washed, evaporate the liquors cautiously, t[illegible] be produced." Edin. "Take of opium, ℥xx.; water, Oviij. [illegible], or a slight excess; macerate the opium in fragments for 24 [illegible] water; and separate the infusion, squeezing well the residue. [illegible] successively with Oj ounce of the water, till the whole is [illegible] Evaporate the whole infusions over the vapour-bath. Decant the cl[illegible] muriate of lime dissolved in ℔iv of water. Set the whole as[illegible] the liquid, wash the sediment with a little water, adding th[illegible]

[illegible]

P. P.—Muriate of morphia is usually met with in the form of a fine soft snow-white powder, but it may be readily obtained in feathery, acicular crystals. It is without odour, but has an intensely bitter, peculiar taste.

C. P.—It is composed of one eq. of muriatic acid, one of morphia, and (in the crystalline state) six of water of crystallization. It is permanent in the air, is fusible by heat, and by a red heat is decomposed and totally dissipated. Muriate of morphia requires for its solution from 14 to 20 parts of cold water, but is soluble in less than its own weight of boiling water; it is also readily dissolved by alcohol.

Adulterations.—The only impurities which are at present commonly met with in this salt are colouring matter and moisture, both of which arise from faulty preparation. The tests of the *Lond. Phar.* guard against these contaminations, as well as against the adulteration with any similar white powder. "Soluble in, entirely soluble; solution colourless; loss of weight at 212° not above 12 per cent.; one hundred measures of a solution of gr. 1. in fl. oz. of water, heated near to 212°, and decomposed with agitation by a few ounces of ammonia, yield a precipitate which in 24 hours occupies 10·5 measures of the liquid."

Ther. P.—Notwithstanding the observations of many, that morphia is free from the stimulating effects of opium, and that it acts purely as an anodyne sedative, it would appear that it possesses essentially, though perhaps not quite identically, the activity of the drug itself. Thus, given in small doses, its first effect is to cause a feeling of excitement of the circulation, and in some persons that of the nervous system: this stage of excitement, however, is never so distinctly marked as when opium has been taken, and sedative effects are more immediately consequent on it. Morphia and its salts will, in some persons, but not so frequently as opium, produce the disagreeable subsequent feelings of nausea and headache caused by that drug; but constipation, sweating, or dryness of the tongue very rarely follow their employment. There are two effects produced by morphia or its salts, when taken in medicinal doses, which do not seem to be caused by opium, namely, a peculiar sensation of coldness over the whole surface of the body, in some cases preceded with a cutaneous eruption, and irritability of the bladder, accompanied with a difficulty in voiding the urine; the latter symptom is most commonly marked when any of the salts of morphia have been taken in full doses. The salts of morphia may be employed in most instances to fulfil the same intentions as opium and its preparations, and which will be fully considered in the next article. We prefer their use to that of opium where, from any cause, we wish to employ that drug without the knowledge of our patient [illegible] be best answered by exhibiting the salts

P. P.—The opium met with most commonly at present almost entirely in British commerce is called Turkey Opium, and is principally brought from Smyrna, a small quantity occasionally coming direct from Constantinople. Smyrna Opium occurs in irregularly-rounded lumps, varying in weight from a few ounces to two or three pounds, the most general size being from a pound and a half to two pounds. When first imported it is usually so soft as to be readily impressed with the fingers, but it quickly becomes hard by keeping. Each lump is covered externally with the oval dark-tinged seeds of some species of *Rumex*, and sometimes also with poppy leaves; it is of a brownish colour, and has a waxy lustre when cut; its odour is strong and narcotic, and its taste bitter, acrid, and nauseous. Constantinople Opium occurs in small flattened cakes covered with a poppy leaf, but without any *Rumex* seeds. It is hard, and of a hair-brown colour; its odour and taste are more feeble than the preceding sort. Egyptian Opium is also sometimes met with in the British market, but within these last few years it has been very scarce. It occurs in flattened round cakes, from 3 to 5 ounces in weight, each cake being wrapped up in a poppy leaf, with the midrib of which it is coloured; it varies much in consistency, some pieces being very soft, and others tolerably hard; but most of it attracts moisture from the air, so as to become soft by keeping. It has a reddish-brown colour; its odour and taste are comparatively feeble. East Indian Opium is not an article of British commerce, being prepared chiefly for the Chinese market. For specimens of the different sorts usually prepared, I am indebted to the kindness of Professor Christison, of Edinburgh, and to my friend Mr. Johnson, late assistant opium inspector at the great factory of Behar. These kinds are commonly met with: Bengal Opium, which includes that prepared at the factories of Behar and Benares, Garden Patna and Malwah Opium. *Bengal Opium* is met with in large round balls from three to four pounds weight, surrounded with a thick envelope of leaves firmly agglutinated together. The contained opium is quite soft, and of a blackish colour; its odour and taste are purely opiate. *Garden Patna Opium* occurs in flat, square cakes from three to four inches square, and about half an inch thick; while still soft, it is closely enveloped in two plates of mica, which firmly adhere to it. It has a reddish-brown colour, homogeneous throughout, and a rather agreeable, strongly opiate odour. *Malwah Opium* is in flattened, round cakes, five or six inches in diameter; it is hard and brittle, covered externally with a coarse greyish dust; internally it is of a light-brown colour, and has a shining fracture; its odour is much more feeble than that of Garden Patna opium. Opium was also formerly prepared in England of very fine quality, but owing to the losses which were sustained from the uncertainty of the harvests, the cultivation of the poppy with that intention is now quite abandoned. It is also prepared in some parts of France and of Germany, for the purpose of procuring morphia from it. A variety of opium called the opium of Mysore Opium, is described as being in

[illegible] upon [illegible] the Pacific Ocean, [illegible] obtained, under [illegible] and [illegible] which, wrapped separately in paper, [illegible] out, had an acrid, nauseous smell, [illegible] taste; [illegible] to be a very active [illegible] of opium above described, the finer qualities of [illegible] should be preferred for medicinal purposes.

C. C.—According to the most recent, as well as the most [illegible] that have been made of opium, the [illegible] which it is composed appear to be the following: [illegible] *meconic*, *sulphuric*, *hydrochloric* or *muriatic*, *acetic*, *nitric*, *phosphoric*, *sulphuric* acid, gum, *caoutchouc*, resin, *fixed oil*, a trace of [illegible] a [illegible] principle, *lignin*, *caoutchouc*, *extractive matter*, and a [illegible] salts of *inorganic bases*. The first seven are [illegible] acids found only in opium; they may be conveniently [illegible] follows, with respect to both their chemical and [illegible] properties:

1. ACIDS.

Names.	Natural Forms.
Meconic ($C^{14}H^{4}O^{14}$)	Meconic
Oxalic ($C^{2}HO^{3}$)	Ferrous
Sulphuric ($S^{2}O^{3}HO$)	Inert (combining with [illegible])
Chlorous ($Cl^{2}O^{3}HO$)	Inert (combining with [illegible])

2. BASES.

Narcia ($C^{46}H^{30}O^{14}N$)	Inert.
Morphia ($C^{34}H^{19}O^{6}N$)	Inert.

3. ACID.

Meconic Acid ($C^{14}HO^{14}$)	Inert.

The constituents of opium are partially soluble in water, [illegible] warm or cold, about a third being left undissolved, and [illegible] chiefly of a dark viscid substance, resembling caoutchouc and [illegible] odor; it is more soluble in alcohol and ether, but [illegible] is still left undissolved. The watery infusion is of a [illegible] color, and has an acid reaction. It is precipitated by the [illegible] and alkaline earths when not added in excess; by the [illegible] of iron and of lead; by the salts of lime and [illegible] by that of gelatine, and by all astringent vegetable substances. [illegible] and substances above enumerated as existing in opium [illegible] of importance in relation to medicine or morphia, which [illegible] below described; it exists in opium combined with [illegible] sulphuric acids. *Codeine* has been used in France by [illegible] others as a narcotic; it is about half the strength of [illegible] active ones originally generally believed to be the [illegible] principle of opium; but more recent investigations, especially [illegible] Dr. O'Shaughnessy of Calcutta, have shown that it [illegible] devoid of any medicinal or narcotic properties, and that [illegible] it is capable of assuming the properties of [illegible] [illegible] has drawn, upon that 100 parts of dried [illegible] [illegible] evaporate by himself and others have [illegible] [illegible] the purpose. "Thebaine, when dissolved [illegible]

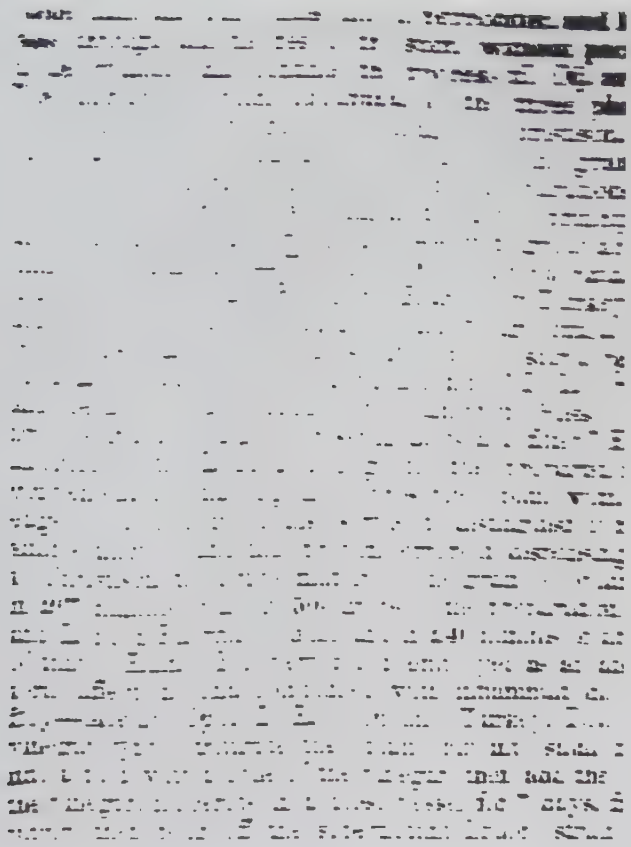
to be a powerful poison; one grain injected into the jugular vein or pleural sac of the pleura, acts like strychnia, causing tetanus and death in a few minutes. *Meconic acid* produces a deep cherry-red colour with the persalts of iron; and this forms the most important characteristic of opium in medico-legal researches.

Adulterations.—Opium is very extensively adulterated, and also varies exceedingly in quality, from the mode in which it is prepared. Many of the impurities which exist in opium may be detected by a careful physical examination; such as moisture, wood, stones, leaves, woody fibre, pieces of metal, seeds, &c. But, by the external characters, it is very difficult to judge accurately of the quality of opium, and the only sure criterion is to ascertain the quantity of morphia contained in a given specimen of the drug. This can only be done accurately by proceeding according to either of the processes given for the preparation of the muriate of morphia. "A pound of good opium thus treated should yield at least ten per cent. of snow-white salt" (Christison). The following test for the goodness of opium given in the Edinburgh Pharmacopœia is intended to indicate the quantity of morphia, narcotine, and resinous extractive examined; but it is difficult of application, and at best can only be a doubtful criterion of quality: "A solution from 100 grains of fine opium macerated 24 hours in 3j. of water, filtered and strongly agitated in a vial, if treated with a cold solution of 3ss. of carbonate of soda in two waters, yields a precipitate which weighs when dry at least 30 grains, and dissolves entirely in solution of acetic acid."

THE EFFECTS.—In excessive doses, opium is a powerful narcotic poison, producing soon after it is taken giddiness and stupor, with scarcely any previous excitement; the stupor increases rapidly, accompanied with complete torpor, slowness of breathing, depressed circulation, general relaxation of the muscles, contracted pupils, and, unless active treatment be speedily employed, death quickly ensues. In medicinal doses, opium generally produces at first excitement of the vascular system, which is accompanied with exhilaration of the nervous functions; these effects are marked by an increase in the force and frequency of the pulse, with increased heat of the body, and by the pleasurable sensations which are experienced throughout the whole system. Soon after, unless the dose be repeated, the sedative influence of the drug becomes observable: the general excitement is calmed, pain is diminished, a disinclination to muscular exertion produced, and the force of external impressions on the senses diminished; this state is succeeded by sleep more or less profound, which lasts usually from six to eight hours. On awaking from the sleep produced by opium, nausea, headache, loss of appetite, and indisposition to any active exertion are very generally experienced. The effects of opium are modified by a variety of circumstances, but most remarkably of all by habit. This is well exemplified by a reference to the customs of some Eastern countries, as Turkey, Persia, and China, where the drug is commonly employed to produce a species of "narcotic and intoxication." In the two former countries the opium is usually

and by Dr. Graves, of Dublin, will be often found particularly useful in fevers attended with much cerebral disturbance. In the early stage, opium, when given with due attention to the condition of the symptoms, is productive of much benefit, nay, is sometimes positively demanded for the safety of the patient; about the eighth or ninth day of the eruption in small-pox, great cerebral disturbance frequently comes on, at first marked by throbbing of the carotids; if opium be not administered immediately on the appearance of this symptom, it is quickly followed by delirium, coma, and death. In *intermittent fever*, opium given in a large dose at the commencement of the cold stage frequently arrests the paroxysm; if there be any local inflammation or congestion present, its use is contraindicated. In *inflammatory diseases*, given in conjunction with calomel, it acts as a powerful antiphlogistic; one grain of opium with two or three of calomel administered every four or five hours, will be often found a remedy of much power in the inflammations of *membranous* parts; it does not, however, prove useful in the inflammation of the *parenchymatous structure* of organs. In *diffuse inflammation*, particularly that fatal form of it which is accompanied with *peritonitis*, opium proves more successful than any other remedy which has been employed; it is best given alone, in doses of from a quarter of a grain to half a grain every hour or every second hour. Its beneficial influence in this affection depends upon its power of lessening "irritability," and thereby enabling the system to bear up against the disease. After a copious bleeding, at the very commencement of an acute attack of *gastritis, enteritis, peritonitis, cystitis, &c.*, a full opiate, or 30 or 40 drops of the tincture, or 1/2 or 3/4 grains of solid opium, will often arrest the further progress of the disease. In *peritonitis*, caused by rupture of the stomach or intestinal canal, life can only be prolonged for even a short period by the use of very large doses of opium. In *rupture of the uterus*, given immediately and freely, opium has in some instances saved the life of the patient. In *acute rheumatism*, when given as first proposed by my colleague, Dr. Corrigan, it is productive of the happiest results; to prove useful in this disease it must, however, be administered freely, one grain at first every second hour, and after a few doses every hour, and the treatment continued for five or six days, or until the disease is subdued; thus given, it does not cause either dryness of the tongue, headache, or constipation; the duration of the attack is shortened, and the dangerous complications of endocarditis and pericarditis prevented. In the early stages of *acute dysentery*, opium, given in full and frequently-repeated doses, will be found, in general, to check the disease; the same may be also stated of *diarrhœa and common cholera*. To allay the pain of *gout and chronic rheumatism*, it is given in full doses with much advantage. In *delirium tremens*, opium is the remedy on which most reliance is to be placed; to prove beneficial it should be employed in very large doses frequently repeated; thus two or three grains of solid opium must be administered every third or fourth hour. The sedative effect of

express the [illegible] repeat the maceration and expression in the same way all the water is all used. "Filter the several infusions as they are made, passing them through the same filter; unite and evaporate them in the capsule-bath to the proper consistence." U. S. A. very fine preparation, and one which should be exempted from the pharmacopœias during the prolonged evaporation, the morphia, being a very insoluble compound with the resinous matter of the opium, which, of course, must tend to lessen the activity of the drug. It is administered in the same doses as the powder.—*Pilulæ Opii seu Thebaicæ*, E. (Opium, 1 part; sulphate of potash, 2 parts; extract of red roses, 1 part; beat them into a proper mass, and divide into five-grain pills.) Each pill contains gr. j of opium. Dose, one to three pills. The sulphate of potash is merely used as a mechanical agent, to divide the opium.—*Pilulæ Saponis cum Opio*, D. *Pil. saponis comp.*, L. (Turkey *fig*, L.) opium (powdered, L.), ʒss.; hard soap, ʒij.; beat them together until they are incorporated.) Five grains contain one grain of opium. Dose, gr. iij to gr. x.—*Pilulæ e Styrace*, D. *Pil. Styracis*, L. *Pil. Styracis comp.*, L. (Storax (purified, L.; the extract, E.), ʒij (ʒ parts, E.); opium (Turkey, D.; hard, in powder, L.), saffron, of each, ʒi. (1 part, L.); beat them into a uniform mass, "and divide into four-grain pills," E.) Every five (four, E.) grains contain one grain of opium. The storax and saffron completely conceal the odour and taste of the opium, and the unscrupulous as to prescribe that drug without the knowledge of our patients.—*Confectio Opii*, D. L. *Electuarium Opii*, E. ("Hard opium, powdered, ʒvj.; long pepper, ʒi.; ginger, ʒij.; caraway seeds, ʒij.; tragacanth, powdered, ʒij.; syrup, ℥vj. (fʒvij, L.)," D. L. "Rub the opium with the syrup previously heated; then add the other ingredients in powder, and mix," D. "Rub the dry ingredients together to a very fine powder, and keep it in a close vessel; and whenever the confection is to be used, add the syrup when hot and mix," L. "Aromatic powder, ʒvj.; senna, in fine powder, ʒij.; opium, diffused in a little sherry, ʒss.; syrup of ginger, ℥j.; mix them together, and beat them into an electuary," E.) About 83 grains (86 grains, L.; 42 grains, E.) contain gr. j of opium. It is an aromatic and anodyne compound, chiefly used as an addition to chalk mixture in diarrhœa. Dose, gr. x. to ʒj.—*Tinctura Opii*, E. (Opium, ʒij; tincture of tolu, ʒss.; syrup, fʒviij.; powder of gum-arabic and extract of liquorice, softened with boiling water, ʒi. each, gr. i; reduce the opium to a fluid extract by the formula for *Extractum Opii*, mix it intimately with the liquorice, previously softened to the consistence of treacle; add the tincture, powder, the gum and sugar; beat the mixture, and beat it into a proper mass, which is to be divided into lozenges of ten grains; [illegible] lozenges contain about gr. j. of opium; they are principally employed in allay troublesome cough.—*Tinctura Opii*, D. L. ℥ [illegible] (hard, L.) opium, (powdered (coarsely, D.), ʒj (ʒij, L.); proof spirit, ℥x (Oj, L.); macerate for 14 days, and filter," D. L. "Opium, good, ʒiij; rectified spirit, Oj or fʒxvj;



powdered extract of opium, 1 oz.) 3j. (Conc. L. ; 3ij., E.) ; cinnamon, bruised (in moderately fine powder, E.), and cloves, bruised, of each, 3j. (Conc. L. E.) ; sherry wine, Oij. (Oj., L. E.) ; proof spirit, fʒij. (fʒiv., L. E.) ; water, Oij. (Oj., L. E.) ; sugar, lbss & (14, L. ; 7, E.) days, and filter.) This preparation is more agreeable both in smell and taste than laudanum ; it is, however, seldom employed internally, being chiefly used as an application to the eye in chronic ophthalmia. The active matter of one grain of opium is contained in min. xvij. of the Dublin wine, in ℥ss. wine more of the Edinburgh, and in min. x. of the *London Pharm.* for internal use, min. x. to fʒj.—*Extract. Opii*, D. L. E. ("Tincture of opium, ʒj. ; tepid water, ʒvi. ; mix." E. "Powder of starch, fʒiv. ; tincture of opium, min. cxx. ; mix." L. "Starch, one ounce ; tincture of opium, fʒss. to fʒi. ; water, fʒij. ; boil the starch in the water, and when it is cool enough for use add the tincture of opium." E.) Used as an anodyne in irritable states of the bowels ; the bulk of the Dublin preparation is too great, as the smaller quantity of fluid is less likely to be expelled ; starch is also a better vehicle than water. On the Continent it is generally stated that opium acts much more energetically when administered in the form of enema than when given by the mouth ; but the contrary opinion is held by British practitioners, who generally employ three or four times the quantity when administered by the rectum.—*Linimentum Opii*, L. E. *Lin. Saponis cum Opio*, D. ("Soap liniment, by measure, 4 parts (fʒvi., L.) ; tincture of opium, 3 parts (fʒij., L.) ; mix." D. L. "Castile soap, ʒvj. ; opium, ʒss. ; camphor, ʒij. ; oil of rosemary, fʒvj. ; rectified spirit, Oij. ; macerate the soap and opium in the spirit for three days, filter, add the oil and camphor, and agitate briskly." E.) *Anodyne liniment*, used as an embrocation in rheumatic pains, neuralgia, &c.—*Emplastrum Opii*, D. L. E. (Opium (burnt, L.), in powder, ʒss. ; Burgundy pitch (resin of the spruce fir, L.), lbij. ; litharge (lead, D.) plaster, &c. ; (water, fʒviij., L.) ; "melt the plaster, add the pitch and opium by degrees, and mix them thoroughly." D. E. "Add the resin, opium, and water to the melted plaster, and, with a slow fire, boil down until all unite into a proper consistence." L.) This plaster contains about a fourth part of opium. It is used as an anodyne application to local pains.—*Hiera Diacodii*. (Opium, sliced, ʒvss. ; expressed juice of the wild orab, Oij. ; nutmegs, ʒiss. ; saffron, ʒss. ; boil to a proper consistence, then add, of pure sugar, ʒiv. ; yeast, two spoonfuls ; set the whole in a warm place near the fire for six or eight weeks, then place it in the open air until it becomes a syrup ; and, lastly, decant, filter, and bottle it, adding a little sugar to each bottle.) This preparation resembles the officinal *Acetum Opii* ; it is highly prized by many practitioners, and is said not to produce the disagreeable subsequent effects of most of the other preparations of the drug. It is more than twice the strength of laudanum. [U. S. P.—Take of opium in coarse powder, 4 oz. ; nutmeg, in like condition, 1½ oz. ; saffron, ½ oz. ; sugar, 10 oz. ; distilled vinegar, 6 p. Digest the opium, nutmeg, and saffron with 12 pints of distilled vinegar on a sandbath, with gentle heat, for 48 hours, and strain.

℥ij to the 3xx mixture.) Its effects are somewhat similar to those of opium; it is but rarely used. Dose, gr. ij to xx.—*Sirupus Papaveris Somniferi*, D.), D. L. E. (Poppy-heads (without the seeds, ℥ij; and bruised, D.), xxvij. (℥iij, L.; viss., E.); boiling water, cong. ij (cong. vj, L.; Ovss., E.). "Macerate for 24 hours in the water, then boil down to cong. j in a waterbath and express strongly, reduce the strained liquor to ℥iij, and strain while hot. Set aside for 12 hours that the dregs may subside, boil down the clear liquor to ℥xj, and make into a sirup." D. "Boil down the capsules in the water to cong. ij, and press strongly; boil down the strained liquor again to Ovss., and strain while hot; set it by for 12 hours that the dregs may subside, then boil down the clear liquor to Oij; add 3xx. of sugar, and dissolve it." L. "Slice the poppy-heads and infuse them for 12 hours in the water, boil down to Ovss., strain and express strongly through calico; boil again to Oiss., then add ℥ij. of sugar, and dissolve it with the aid of heat." E.) Sirup of poppies is usually employed as a narcotic in infantile diseases: it should be administered to infants and children with great caution, as Dr. Montgomery states that in more than one instance a teaspoonful has proved fatal to a healthy infant; the more powerful requisite, as a preparation made by adding laudanum to simple sirup is frequently substituted for the true sirup. Dose, for infants and children, 3ss. to 3ij.; for adults, ℥ss. to ℥j.—*Decoctum Papaveris*, D. L. E. (Poppy-heads, sliced, ℥iv.; water, by measure, ℔j. (Ovss., L.; Oiij., E.); boil for a quarter of an hour, and strain.) For external use only.

Rheas, L. Rudentia petala, E. Papaver rhœas, petala, O.—*The petals of the Red or Corn-poppy.*—Indigenous, belonging to the natural family *Papaveraceæ*, and to the Linnæan class and order *Polyandria Monogynia*.

B. O.—A slender annual, 2 or 3 feet high; stem hairy, nearly leafless, its hairs and those of the flower stalks spreading; leaves pinnatifid; flowers with broad, deep scarlet petals, capsules glabrous, nearly globose.

P. & C. P.—The petals should be collected immediately after their expansion, as they drop off easily; they should be dried quickly, so as to preserve their colour. In the recent state, red poppy petals are of a rich scarlet colour, which becomes darker by drying; they have a feeble odour of opium, and a slightly bitter taste. They consist of vegetable albumen, red colouring matter, astringent matter, red resin, wax, gum, and some salts (Boeris and Lodwig). It is probable that they also contain a trace of morphia. They yield their colouring matter and other principles to boiling water.

Th. E.—The petals of the red poppy possess, probably, some feeble narcotic properties, but they are only used as medicines in the form of sirup, as colouring ingredients, in consequence of their fine dark colours.—*Sirupus* (*Papaveris*, D.) *Rhœados*, D. L. E. (Fresh petals of the red poppy, ℥ij; boiling water, by measure, ℔j; add the petals gradually to the boiling water, remove the vessel from the fire and macerate with a low heat for 12 hours,

[illegible] Ph. U. S. P.] are [illegible]. [illegible] *Three apples.* *The herb.* [illegible] *and seeds.* [illegible] *Dotted strawberries.* [illegible] belonging to the natural family *Solaneæ*, and to the [illegible] and order *Pentandria Monogynia*.

[illegible]

T. T.—The whole herb should be collected when the plant is in flower, and carefully dried according to the directions of the London College. The leaves should be removed from the stems and branches, which are to be rejected. The seeds, when fully ripe, are black, and should then be gathered. As usually met with, the dried herb is chopped into small pieces of a green or brownish color; it has a feeble, narcotic odor (which in the fresh state is unpleasant and heavy), and a bitter, nauseous taste. The seeds are small, kidney-shaped, and rough; when bruised they have the same odor as the herb; their taste is unknown and bitter.

C. P.—The seeds contain fixed oil, wax, resin, extractive, gummy matter, malic acid, some salts, and a peculiar alkaloid first discovered by Brandes, and named by him *Daturia*, but which has been since shown by Runge to be identical with *Atropia* (see pages 331 and 332). It is on this principle that the medicinal properties of stramonium depend; it exists also in the leaves [illegible] and would yield their virtues to water and to alcohol. [illegible] tivity is much impaired by long boiling, as is proved [illegible] extract.

T. E.—Stramonium leaves and seeds act as powerful narcotics in large doses proving fatal, with all the symptoms of narcotic poisoning. In medicinal doses, as might be expected from the activity of their active principles, they produce effects nearly similar to those of belladonna and hyoscyamus, and have [illegible] used with the same intention in the treatment of [illegible] irritable affections, as in dysentery and scirrhus of the [illegible] uterus, and in all forms of chronic disease attended with acute pain. Administered in small doses frequently repeated, [illegible] subjects is associated, stramonium is a remedy of [illegible] becoming almost opened early acquaintance and [illegible] of the objects of the use both, when [illegible] [illegible] useful practice in the treatment of [illegible]

a common pipe in the same way as tobacco. The smoking of stramonium, however, should be employed with great caution, and used only in very small quantities at a time, as in many instances it has produced dangerous symptoms; and it should never be prescribed for very old persons, or in cases where there is a tendency to apoplexy or to paralysis.

U. S. & M. de Am.—Of the powder of the herb or leaves, gr. j to gr. v.; of the seeds, gr. ½ to gr. j, gradually increased until some obvious effect is produced. For smoking, gr. x to gr. xx of the chopped herb may be used.—*Extractum Stramonii*, D. L. E. (Stramonium seeds, ℥j (℈xv., L.); boiling (distilled, L.) water, oxvj, L.; digest (macerate, L.) for 4 hours in a vessel lightly covered (near the fire, L.), then take out the seeds, bruise them in an earthen mortar, and, when bruised, return them to the liquor; then boil down to ℥iv. (℥iv., L.); strain the liquor (while hot, L.), and evaporate to a proper consistence." D. L. "Take of stramonium seeds any convenient quantity, grind them well in a coffee-mill, rub the powder into a thick mass with proof spirit, put the pulp into a percolator, and propound proof spirit till it passes colourless; distil off the spirit, and evaporate what remains in the evaporating-bath to a proper consistence." E.) Prepared according to the Edinburgh Pharmacopœia, this extract is the best, being more certain as well as more active. Dose, gr. ½, gradually increased.—*Tinctura Stramonii*, U. S. (Stramonium seeds, bruised, ℥iv.; proof spirit, ℥xviij.; macerate for 14 days, and filter through paper.) An excellent preparation. Dose, mxx. ℈ ss to ʒss. ads.

Incomp.—The caustic alkalies; acetate of lead; and nitrate of silver.

In poisoning with stramonium, the same treatment should be employed as in poisoning with belladonna.

TRYONOPHYTON, L. Ruta pratensis, ROSA, D. *Nervous of joints with leaves; the leaves of Rhus toxicodendron.*—A native of North America, belonging to the natural family *Anacardiaceæ*, and to the Linnæan class and order *Pentandria Trigynia*.

S. C.—A small shrub, whose numerous branches, leaves petioles, flowers, germ, &c.

P. P.—The leaves and branches in the recent state abound in an acrid milky juice, which becomes black on exposure to the air; so acrid is this juice, that even the emanations from the shrub will in some persons produce heat, redness, and sometimes erysipelatous inflammation, if they are exposed to its influence. In the dry state the leaves have no odour; they have a weak, somewhat acrid taste.

C. P.—No chemical analysis has been made of this plant; the milky juice probably contains a volatile narcotico-acrid principle. In the dry state, the acrid taste indicates the presence of tannin, gallic acid, and resinous substance.

Ths. E.—In large doses, toxicodendron acts as a narcotico-acrid poison. It has not been much employed in medicine, as the leaves are rarely used in the dry state, owing to the volatility of their ac-

[illegible]

CHAPTER XVI.

REFRIGERANTS.

[illegible]

Refrigerants are medicines calculated to diminish the heat of the body when morbidly increased, and to produce a sensation of coolness. Actual experiment has proved that such substances when taken into the stomach, although they cause a sensation of cold over the whole body, do not really diminish the temperature; consequently, it has been hitherto found impossible to explain satisfactorily the phenomena which follow their internal use. Applied externally, in the form of cooling or evaporating lotions to the surface of parts, their mode of operation is readily understood, the temperature of the part to which they are applied being actually diminished. The principal use of refrigerants in the practice of medicine is in the treatment of febrile and inflammatory affections, to which the benefit they produce appears to depend on the fact that they diminish action on the stomach, or common sympathetic body, and the circulation in the force of the circulation. During their administration, also, irritability is allayed, and the morbid sensations of thirst, heat, and nausea are diminished.

[In view of what is here said by way of definition of the class of remedial agents, the student will be embarrassed, upon turning to the next chapter, and finds it impossible to discriminate [illegible] *acids from solutions*, even with the synonyms under [illegible] heralded. He will incline to the opinion that all the preparations are sedatives and contra-stimulants as these defined, and will not be compelled to honour his judgment, and yet he [illegible] leaves him in his dilemma.]

Synonyms: L. *Wood-sorrel*. *Herb of Oxalis*; [illegible]. An indigenous plant, belonging to the natural family [illegible] and to the Decandria class and order. *Dicotyledones Perigynæ*.

P. — [illegible]

Y. & C. P. — [illegible]

tone. Its only important constituent is lineamin or pectin, of which it contains from 1·00 to 1·25 per cent.; it yields its properties to boiling water.

Ph. E.—This herb, infused in boiling water, forms an agreeable refrigerant drink in febrile disorders; in the present day it is only used as a domestic remedy, and might well be spared from the Materia Medica.

ACIDUM.—*Vinegar* (described in the division *Astringents*) is a useful refrigerant in fevers or inflammatory affections. It is not much employed as such internally; nevertheless, f℥ss to f℥ij diluted with f℥xx of water forms a cooling drink, and may be taken *ad libitum* in cases where its astringent property is not objectionable. As an external refrigerant, its action is attended with much benefit, applied by means of a sponge to the surface of the body; to form a solution for this purpose, f℥j is mixed with f℥ij of water. For internal use, the simple oxymel of the Dublin and London Pharmacopœias is well adapted, or the following preparation may be used: *Sirupus Aceti*, E. (Vinegar, French or provisional, f℥xij; pure sugar, ℥xvj; boil them together.) Dose, f℥ij to f℥ss, as an adjunct to other medicines.

ACIDUM CITRICUM, D. L. E. *Citric acid.*

P. P.—Citric acid crystallizes in transparent, colourless, regular rhomboidal prisms, terminated by four trapezoidal faces. They are odourless, but have an agreeable, purely acid taste. Sp. gr. 1·017.

C. P.—Crystallized commercial citric acid consists of $\dot{H}$ HO, $C^{12}H^{5}O^{11}+2$ HO, but on cooling a saturated solution at 212°, it crystallizes with an eq. less of water (Graham). The crystals are permanent in the air; heated to 212°, they lose the two atoms of water of crystallization, and at a higher temperature are decomposed; 100 parts of citric acid are soluble in 75 parts of cold, or 50 of boiling water; the solution undergoes decomposition by keeping. When pure, the crystals dissolve completely in alcohol. Citric acid is readily distinguished by the following characteristic: when a few drops of a solution of the acid are added to lime-water, a clear liquid results, which becomes turbid on being heated, from the deposition of a white precipitate.

Dose—D. L. E. Lemon juice, as much as may be required (Dub., L. E.); one pint made a sufficient mixture, L. E.; or a sufficiency, E.; made agreeable with eight times its weight of the dark sugar (Syrupus, E.); lemon, or of the same proportion of the dark sugar, E.; distilled water, Oj, L.E. —Add the citric crystals to the lemon juice made hot, and as soon as the citric acid is dissolved, pour off the transparent liquid, wash the crystals frequently with eight times their own weight of cold water, and dry them upon a fine linen cloth. Then dissolve the crystals, L.; and add (for a quarter of an hour, L.) three fluidounces of animal charcoal, and strain it; evaporate the strained liquid (with a gentle heat, L.) and set it by for crystallization (Dub.); dissolve the crystals (but they may be taken again out of water previously used for this, L.) and crystallize, L.E.—Dry the lemon juice of a ripe fruit of the citron kind, and then squeeze out the juice, and with the addition of three or four times its weight of water, set the whole to ferment in a warm place. When the fermentation is over, strain the liquor, and evaporate it to the consistence of honey, and set it by for crystallization.

Adulterations.—Tartaric acid is adulterated with nitrate of potash, and with lime: the former is detected by its little solubility in cold water; the latter, by an ash being left, on the acid being saturated with the salt of lead oxyde of ammony.

Ex. 1.—To prepare refrigerant drinks in febrile and inflammatory diseases, tartaric acid is much employed, as being cheaper than citric acid. Its principal use, however, is for the preparation of effervescing draughts, when added to the alkaline carbonates.

D. & M. or Aqu.—Gr. x. to 3ss.; its refrigerant effects are best manifested when it is dissolved in a large quantity of cold water. For the preparation of effervescing compounds, the following are the proportions required: 3i. of crystallized tartaric acid is saturated by gr. xxvij. of crystallized bicarbonate of potash, or gr. xxxviij. of crystallized carbonate of soda, or gr. xxij. of soapy-carbonate of soda, or gr. xxxv. of hydrated sesquicarbonate of ammonia.—*Pocillum Acidi Tartarici*, L. (Tartaric acid, 3ij.; pure sugar, 3viij.; volatile oil of lemons, min. x.) pulverize the sugar and acid, mix the oil, mix them thoroughly, and beat them with mucilage into a proper mass for making lozenges. Commonly employed under the name of *acidulated drops* in cold sore throat and colds.

Incomp.—The alkalies; salts of potash, of lime, and of lead; and all carbonates.

Citrus acetosa, D. L. H. *Pyrus aurea*, O. *Fructus*, L. *—the juice of the fruit*, D.—*the fruit*, L.—*of Citrus aurantium.*—This tree is indigenous in many parts of Africa and Asia, and is cultivated extensively in the South of Europe, the Azores, and the West India Islands. It belongs to the natural family *Aurantiaceæ* and to the Linnæan class and order *Polyadelphia Polyandria*.

[illegible] of the orange is too well known to require description.

the pure acetous acid and malic acid, combined [illegible] albumen, sugar and water.

Ed. E.—The juice of the sweet orange is an agreeable [illegible] and, calculated to allay [illegible] in febrile and inflammatory [illegible] it is particularly beneficial in diseases attended with scurvy [illegible] and as scurvy is so important not to interrupt a cure [illegible] diminishes the stomach or intestines, as in strong [illegible]

Lemons, D. L. E. *Lemon-juice.* D. L. *Lemon-peel.* D. *Lemon juice. The fruit of Citrus medica.* H. E.—*Citrus limonum.* L. E.—Natives of the same countries, and [illegible] the same botanical classification as *Citrus aurantium.*

E. C.—The lemon-tree attains a height of 20 or 25 feet; stem, with [illegible] usually unarmed, prostrate; the petioles very narrow, and winged; flowers [illegible] tinged with red; fruit ovate, terminated with an elongated [illegible] pale.

P. & C. P.—Lemons are too well known to need [illegible] juice consists of 1·31 per cent. of carbonic acid, 0·74 of [illegible] acid, and bitter extractive, and 97·95 of water. Lemon-juice [illegible] Lepipe; Christison states that they are best preserved by [illegible] them with jewels stocked first in bottles of earthenware [illegible] mouths of which are secured with corks and wax. The juice [illegible] be kept unchanged for years by adding to it, expressed and [illegible] ed, a tenth part of spirit of wine, filtering, and preserving in well-stopped bottles.

Ed. E.—Lemon juice forms a useful and agreeable [illegible] allaying thirst, and diminishing preternatural heat in [illegible] and inflammatory diseases. It is also found particularly useful in [illegible] fungus.

D. & M. or Aux.—Lemon juice is usually administered in the form of *lemonade*, which is prepared by adding the juice [illegible] tion of twelve parts of boiling water, and sweetening with [illegible] the taste. It is also much employed for the preparation of effervescing draughts with the alkaline carbonates; [illegible] ate of potash requires for its saturation about [illegible] of the supercarbonate of soda, [illegible] and [illegible] of the supercarbonate of ammonia, five.—*Syrupus Limonum.* D. L. E. [illegible] lemon juice, by measure, [illegible] as soon as the [illegible] subsided, put the juice into a matrass, and subject it to the heat of [illegible] ing water for a quarter of an hour; when cold, pass it through [illegible] sieve; add, by degrees, [illegible] of white sugar, dissolve it in a [illegible] dition heat in a covered vessel, frequently shaking it; when it is [illegible] solved; then set it aside for 24 hours; remove the scum, and [illegible] off the syrup from the sediment." E. "Lemon juice, clarified [illegible] of saponine by subsidence, and filtering, [illegible] ounces; dissolve the sugar in the lemon juice with a gentle heat; [illegible] made for 24 hours; remove the scum, and pour the clear [illegible] from the dregs." L. E. "An excellent addition to [illegible] in febrile affections, may be given with boiling water [illegible] as soon as kept in well-stopped bottles, it does not [illegible]

MORUS, L. *Morus nigra*, LINNÆUS. *Mulberries.* *The fruit of Morus nigra.*—A native of Persia, now cultivated in Great Britain; it belongs to the natural family *Urticeæ*, and to the Linnæan class and order *Monœcia Triandria*.

B. P.—A moderate-sized tree with rugged bark; leaves cordate, lobed, downy pointed, in many varieties cordate; fruit dark purple, "consisting of the ripened calyces, becomes fleshy and grows together, enclosing a few membranous pericarps" (LINDLEY).

P. & C. P.—The fruit, commonly called mulberries, has a faint, agreeable odour, and an acidulous, sweetish taste. It contains free malic acid, sugar, colouring matter, and water. It yields its virtues to boiling water.

TH. E.—Mulberry juice is an agreeable refrigerant, but taken in quantity it is apt to produce diarrhœa. In the present day it is very seldom used. The following is the only officinal preparation of mulberries: *Succus Mori*, L. (Juice of mulberries, strained, Oj; sugar, 3xxv; dissolve the sugar in the mulberry juice with a gentle heat, and proceed as for syrup of lemons.) Used for the same purposes as the syrup of lemons; it has a fine purple colour. Dose, fʒj to fʒij.

POTASSÆ CHLORAS, L. *Chlorate of potash.*

P. P.—In flat, pearly crystals, of the oblique prismatic system; odourless, but having a cooling, unpleasant taste, like that of nitre. Sp. gr., 1·989.

C. P.—It is composed of one eq. of potassa, and one of chloric acid (KO,ClO⁵). It is permanent in the air; exposed to heat, it fuses, gives out oxygen below a red heat; if the heat be increased, all the oxygen is driven off, and chloride of potassium left. It is soluble in about 12 parts of cold water, and in twice its weight of boiling water. This salt is readily known by dropping a little sulphuric acid on the crystals; they fizz, become yellow, afterwards red, and give out the greenish-yellow gas peroxyde of chlorine.

Test.—By transmitting chlorine gas in succession through a strong solution of caustic potash or carbonate of potassa.

Adulterations.—The only impurity met with in this salt is chloride of potassium, and this arises from faulty preparation; it is readily detected by adding nitrate of silver to a solution of the salt in distilled water; if any chloride be present, a white precipitate is thrown down.

TH. E.—Chlorate of potash, in its action on the system, resembles nitre; by some it has been held to be diuretic, but its most manifest action is refrigerant. It was formerly employed in diseases which were supposed to depend on a deficiency of oxygen, as in phthisis and scurvy. More recently it has been proposed as a remedy in diseases attended with a deficiency of the red corpuscles of the blood, as in malignant cholera, typhoid fevers, &c. But at present it is very little used as a medicinal agent.

D. & M. ℞ Aquæ ℥j, potassæ chloratis ʒj. Dissolve in water, and sweeten with syrup.

Potassæ nitras.—*Nitrate of Potash* (Dublin) (*Nitre*, *Saltpetre*) operates as a refrigerant, usually diminishing preternatural heat in febrile and inflammatory affections, and increasing the watery, also the force and frequency of the pulse (see p. 24), and, consequently, it has been named a *sedative*. The emphysema of nitre in hæmorrhoidal, peritoneal, or hepatic affections is attended with more benefit, when depletion and cooling are combined with it. Nitrate of potash is contra-indicated in inflammatory affections of the stomach, the intestinal canal, and kidneys or bladder, in consequence of its irritant properties. It has also been alluded to as a powerful antidote to the poison of hydrocyanic acid. Externally, nitre is employed as a means of producing cold during its solution in water.

D. & M. ov Acet.—In powder, gr. x. to gr. lx., mixed with sugar, or dissolved in water. *Nitre whey*, prepared by boiling a drachm of nitre in Oj. of new milk and straining, is an excellent refrigerant drink in mild febrile diseases. Dose, fʒij. to fʒiv. Nitrate of potash is to be administered as a refrigerant dissolved in water, the cold of which is much increased, if the solution is not made until just before it is swallowed.

Rosa canina, Ruppius, D. Fructus rosæ, L. Rosæ semina, C. *The fruit*, D.—*the pulp of the fruit*, L.—*the hip deprived of its carpels*, N.—*of Rosa canina, and of several allied species*, L.—The dog rose is a common indigenous shrub, belonging to the natural family *Rosaceæ*, and to the Linnæan class and order *Icosandria Polygynia*.

D. C.—Stem with scattered, hooked prickles, which are absent in the leaves called *stipules*; leaflets with irregular serratures, terminated with a point.

P. & C. P.—The pulp (*hip*) of the dog rose consists of the fleshy calyx, enclosing numerous small carpels enveloped with hairs; it is of a bright scarlet colour, smooth and shining. The expressed juice is alone used in medicine; it should be separated from the carpels and hairs; it has a sweetish, acidulous taste, and is composed chiefly of uncrystallizable sugar, gum, citric and malic acids.

Ts. L.—The hip of the dog rose is an agreeable subacid fruit, but is only employed in medicine in the following preparations:—*Confectio Rosæ caninæ*, L. *Conserva Rosæ fructûs*, C. (Take of the hips of the dog rose, Bj.; sugar, powdered, Jxx. Expose the pulp of the rose to a gentle heat in an earthen vessel, then add the sugar gradually, and rub together until they are thoroughly incorporated. C.—"Take any convenient quantity of ripe, recent hips, reduce them to pulp, carefully removing all the carpels, heat them to a fine pulp, adding gradually their own weight of sugar." K.) Used only as a basis for forming more agreeable compounds into pills or electuaries, and, as it contains no free acid, it is rarely employed for that purpose with the *mel* of rose.

Rosa, L. Rosæ petalum, rubrum, D. Rosæ—*the flowers*, *florum petala*.—Ar. indigenous plants, belonging to the natural family *Polypetalæ*, and to the Linnæan class and order *Icosandria Polygynia*.

S. C.—[illegible] large [illegible] [illegible] [illegible]

[illegible]

[illegible]

[illegible]

[illegible]

P. P.—Medicinal hydrocyanic acid is a colourless liquid, with a peculiar penetrating odour and a bitter taste, leaving a warm sensation on the tongue and palate. The odour is generally stated to resemble that of the volatile oil in distilled water of bitter almonds, but it is decidedly different, and should not be confounded with it. The specific gravity varies with the quantity of real or anhydrous acid contained in it.

U. P.—The medicinal acid is a mixture of anhydrous hydrocyanic acid and water. Prepared according to the directions of the Dublin College, it contains, according to Barker's observations, 1·6 per cent. of real acid; but according to Mr. Donovan, 2·82 per cent. The London preparation contains 2 per cent., and the Edinburgh 3·3 per cent. Anhydrous hydrocyanic acid is composed of 1 eq. of cyanogen, and 1 of hydrogen (H+Cy). The quantity of pure acid contained in the medicinal preparation may be readily ascertained "by accurately weighing a portion of it, amounting to about 100 grains, adding to the portion nitrate of silver in excess, collecting the white insoluble precipitate of cyanide of silver which falls on a weighed filter, drying and weighing together, precipitate and filter; five parts of the precipitate correspond to one part of pure acid" (Graham). Hydrocyanic acid reddens litmus paper feebly, and the red tint disappears by heat; it is very volatile, and very decomposable by keeping, a black precipitate being formed in it. For medicinal purposes, the dilute acid may be kept for a long time unchanged by the addition of a few drops of sulphuric acid. The best test for the presence of this acid is its action on sulphate of iron: if a few drops of a solution of caustic potash be added to a little suspected to contain hydrocyanic acid, and then a solution of some proto-sulphate of iron, as the common sulphate or tincture of the muriate of the shops, a greenish precipitate is produced, which becomes bright Prussian blue on the addition of a little sulphuric acid. Its presence is also indicated by adding a few drops of sulphuric acid to the liquid containing it, and covering the vessel with a glass plate, having its lower surface moistened with a solution of nitrate of silver; owing to the volatility of the acid, the surface of the plate will be covered with the white cyanide of silver.

Adulterations.—Medicinal prussic acid, as met with in the shops, varies much in strength, is often much contaminated with impurities, and frequently is unfit for use, from having been ill kept. The strength is most conveniently ascertained by Professor Christison's test given above, of course bearing in mind the difference of the preparations of the three British Pharmacopœias. The presence of any kind impurity is indicated by the preparation not being entirely vaporizable by heat. The most common impurity met with is sulphuric or muriatic acid; their presence may be ascertained if the medicinal preparation acts strongly on litmus paper. Sugar may be easily detected by the test first proposed by my friend Professor Longmore.—Drop one or two crystals of the dyed or-

[illegible] grains of potassium" [illegible]
very strongly acid to [illegible]
Taylor on Opium." When used for the first time [illegible]
it is generally thought to [illegible] discovered.

Ex. 1.—Hydrocyanic acid is the most powerful poison [illegible]
which we are acquainted; death has been occasioned in [illegible]
a minute's exposure to the fumes of the acid [illegible]
(Christison). The usual symptoms produced by a poisonous [illegible]
are convulsions, difficult and spasmodic breathing, and [illegible]
followed by death in a few minutes; in some instances [illegible]
life has been prolonged for half an hour or more; but [illegible]
may safely be said, very large doses operate so rapidly [illegible]
symptoms that can be observed are two or three gasps [illegible]
spasms. In medicinal doses hydrocyanic acid acts as a [illegible]
sedative, producing immediately after it has been taken [illegible]
of quiet and calmness throughout the whole system, [illegible]
force and frequency of the pulse, lowering the sensibility [illegible]
nervous system, and allaying irritation when it exists [illegible]
to the stomach, which may be said to be its more [illegible]
effect. Hydrocyanic acid promotes the digestive powers, and [illegible]
seldom acts greatly on the bowels. As a remedial agent [illegible]
has been principally used to allay excitability, to diminish pain, [illegible]
to lessen spasm. Thus it has been used with much benefit [illegible]
angina and painful affections of the stomach and bowels, [illegible]
dysphagia and *cardialgia*, as *pyrosis*, particularly when [illegible]
with much pain; in chronic vomiting, and to relieve pain [illegible]
It has also been found very serviceable in allaying irritable [illegible]
spasmodic cough in various pulmonary affections, as in [illegible]
catarrh unaccompanied with inflammation, in pure spasmodic [illegible]
asthma, in the advanced stages of phthisis, and in the spasmodic [illegible]
cough of nervous and hysterical females. It has also been [illegible]
fully employed to allay vomiting and purging in severe cases [illegible]
cholera, and to check the colliquative diarrhœa and [illegible]
ing of hectic. Lastly, it has been administered as a [illegible]
anodyne in neuralgia, tic douloureux, uterine [illegible]
nal affections, and nervous palpitations, but in [illegible]
very equivocal. Externally, in the form of [illegible]
very serviceable in allaying the violent itching which [illegible]
forms of skin disease.

℞. ℥j. ad Aqu.—The medicinal acid should be so [illegible]
adjusted as dilute of one or two drops, which should be [illegible]
every second or third hour according to circumstances [illegible]
are very tractable. It is best given in distilled water [illegible]
simple syrup may be added; it should always be prepared [illegible]
loss of strength, or, when given in mixture, it is apt [illegible]
use of the liquid, for thus a single dose may produce [illegible]
effects. The quantity given should be increased very [illegible]

and its effects carefully watched. For external use, a lotion may be prepared with ℥ij. of the acid, and ℥viij. of distilled water.

Incompat.—Nitrate of silver; red oxyde of mercury; sulphate of copper; sulphate and muriate of iron if an alkali be present; and the alkalies.

In cases of poisoning with prussic acid, if the person be seen immediately, he should be made to inhale ammonia or chlorine diluted with atmospheric air, or the solutions of either of these gases in water should be administered in small but frequently repeated doses; but if some time have elapsed, and insensibility be present, the most powerful external stimulants, with the cold affusion and artificial respiration, should be employed.

ACIDUM PYROLIGNOSUM. *Pyroligneous acid.*

P. & C. P.—This remedy was anciently known as *cedria*, or *the oil of cedar*, and was used by the Egyptians as an embalming agent, being powerfully antiseptic. That it contains creasote is proved by the extent of its potency. It is procured by the dry distillation of hard wood, in an iron retort heated to redness, and its chief impurity is found to be vinegar, having empyreumatic oil and resin in solution, and in its strongest form is acetic acid.

Th. P.—It is chiefly applied externally, although its internal use is occasionally advised in sphacelus, gangrene, putrid ulcers, and cancer; in phthisis, scrofulous eruptives, and discharges, particularly in chronic cases, and diseases of the internal ear. Creasote has, however, almost supplanted its use. Though alleged to be narcotic, yet that property is equivocal.

D. & M. of Adm.—The differences in the strength of the acid employed caution in its internal use. In ordinary cases, the dose is from 5 to 30 drops in some aromatic water, 3 or 4 times a day. As a caustic, it may be applied externally with a pencil; and diluted with 8 parts of water, it is used as a wash or injection; and for a collyrium and gargle, 12 parts of water to 1 of the acid. In purulent discharges from the ear, 2 drachms to 6 oz. of water will form a useful injection; and in cases of deficient cerumen, 2 drops of the following may be dropped into the ear night and morning: Acid. pyroligneous, oil of turpentine, sulphuric ether, equal parts.

ACONITUM, E. ACONITI FOLIA ET RADIX, L. ACONITUM NAPELLUS, FOLIA, D. *Monkshood. The leaves (and root, L.) of Aconitum Napellus*, D. L. *The leaves of Aconitum Napellus*, E.—It has not been yet accurately ascertained which species of the genus *Aconitum* was employed by Störck, who was the first to use it as a medicine; the reference of the Edinburgh College appears to me to be the more correct. This species is said to grow wild in some parts of England, but it was probably introduced from the mountains of Europe, where it grows abundantly in woods. It belongs to the natural family *Ranunculaceæ*, and to the Linnæan class and order *Polyandria Trigynia*.

P. P.—Aconite root has a faint, earthy odour, and a bitterish taste, leaving a benumbing impression on the lips and tongue. The leaves have a very feeble narcotic odour; their taste is similar to that of the rose. When carefully dried, they retain their virtues for many years, if kept in close vessels, in a dry place, excluded from the light.

C. P.—The very accurate chemical analysis has been made of this plant. It contains an acrid volatile principle, green colouring matter, vegetable albumen, some salts, and a peculiar alkaline principle discovered by Hendrie, and named by him aconitina; as this substance has been introduced into the last edition of the London Pharmacopœia, the process for preparing it and its properties will be described among the pharmaceutical preparations of the class. Aconite leaves or root yield their active principles completely to alcohol, but very imperfectly to water.

Ts. E.—In large doses, the leaves or root of aconite are highly poisonous, appearing to produce death by a direct depression of the vital powers: thus, the most manifest symptoms are universal muscular debility, and failure of the circulation; in addition to which, a feeling of numbness and tingling is experienced over the whole surface of the body; vomiting also occurs, and temporary blindness, the pupil of the eye being contracted; convulsions, however, are rarely produced by poisonous doses of aconite. As a remedy, it has been used with the most marked benefit in all forms of painful disease, even when accompanied with inflammation; this is well illustrated by its employment in the treatment of acute rheumatism, and of neuralgia. In the former of those diseases Dr. Turnbull, of Geneva, a physician of this place, the alcoholic extract, given in doses of from half a grain to eight grains frequently repeated, during the severest attacks of the rheumatism of from two to six days. It has also been employed and as successful in the practice of British physicians, who have probably owing to the looseness of the officinal extract of the Edinburgh and London Pharmacopœias; in a few cases in which I prescribed the powdered leaves, the beneficial results were most striking. In neuralgic pains, particularly *tic douloureux*, aconite externally applied in the form of tincture, or solution in sulphuric ether or chloroform, in many instances will cure the disease. It is not an unfrequent remedy also in *lumbago*. It has also been employed in the treatment of many other diseases, but in none of them has its efficacy been fully established.

D. R. M. or Ann.—The powder of the root or leaves may be given in doses of from gr. ij. to gr. xx. gradually increased until effects are produced.—*Extractum Aconiti*, L. P.—*Extractum Aconiti*, E. P.—Pills of powder leaves, 3 j. to 3 ij. with a little soap, in a mass, every [illegible]

ture, and evaporate it, assisted by a proper condition." D. L. "Take of fresh leaves of monkshood any convenient quantity, beat them into a pulp, express the juice, subject the residue to percolation with rectified spirit, so long as the spirit passes materially coloured; unite the expressed juice and the spirituous infusion; filter, and all the spirit, evaporate the residue in the vapour-bath, taking care to remove the vessel from the heat as soon as the due degree of consistence shall be attained." L.) As aconite leaves yield their active principles almost entirely to alcohol, and but very partially to water, the Edinburgh preparations must alone be active. The dose of it is gr. ss to gr. viij, repeatedly.—*Tinctura Aconiti.* (Aconite root, recently dried and coarsely powdered, ℥ij (or fresh aconite leaves, ℥iss.); rectified spirit, Oiss.; macerate for 14 days, express and strain.) Dose, mxx. to mlx.; it should be used with caution; the best time for external use.—*Extractum Aconiti Alcoholicum Aconiti.* (Prepared by distilling off the spirit from the tincture.) Dose, gr. ½ to gr. j.—*Unguentum Aconiti.* (The alcoholic extract, 1 part; prepared lard, 2 parts; mix.) An excellent application, rubbed over the painful part in neuralgia.—*Aconitina, L.* Aconite root, dried and bruised, ℥ij; rectified spirit, cong. ij; dilute sulphuric acid, solution of ammonia, purified animal charcoal, of each, a sufficiency. Boil the aconite with a gallon of the spirit for an hour in a retort with the receiver adapted to it, pour off the liquor, and again boil the residue with another gallon of spirit and with the spirit recently distilled, and pour off the liquor; let the same be done a third time. Then press the aconite, and all the liquors being mixed and strained, let the spirit distil; evaporate what remains to the proper consistence of an extract. Dissolve this in water, and strain; evaporate the liquor with a gentle heat, that it may thicken like a syrup. To this add of dilute sulphuric acid mixed with water, as much as may be sufficient to dissolve the aconite; then drop in the solution of ammonia, and dissolve the precipitated aconitina in dilute sulphuric acid and water, raised as before; afterward mix the animal charcoal, frequently shaking them during a quarter of an hour. Lastly, strain, and solution of ammonia being again dropped in, that the aconitina may be precipitated, wash and dry it.) Aconitina is in the form of a white, semi-crystalline powder, odourless, with a bitter taste. It is very soluble in sulphuric ether, less so in alcohol, and very slightly in water. "In its perfectly pure, the alkaloid is so powerful a poison, that a fourth of a grain has endangered the life of an individual" (Pereira). As usually met with, it is of a greyish-yellow colour, in which state it is very impure. Aconitina possesses, but of course much more powerfully, the same medicinal virtues as monkshood; it has been principally used in the form of ointment, in the headache and other neuralgic pains. But it does not appear to possess any material advantages over the alcoholic extract, as considering its extreme poison, the 4th to 4th of a grain would warrant its employment as a medicinal agent. It cannot be administered internally with safety.—*Tinctura Aconitinæ.* Tincture (Aconitina gr.

...rubbed with, *fifty drops* dissolved in ... Applied externally by means of a small sponge.—*Dispensatory*, Thomson. ... (*Lond. Ed. Ph. Journ.*, vol. iii., April, p. 1843.) Employed by dissolving with the finger during several minutes.

In cases of poisoning with prussic acid, stimulants should be immediately administered, and the most active stimulants, both external and internal, should be employed. No antidote has as yet been discovered for it.

Amygdalus amara, Hayne. *Essence* (*Volatile oil*) *of bitter almonds.*—The bitter-almond tree has been described in the order *Tricoccæ*.

Prep.—Oil of bitter almonds is obtained by submitting to distillation with water bitter almonds from which the greater part of the fixed oil has been expressed.

P. P.—As usually met with it is of a golden-yellow colour. When obtained from almonds which have been kept for a considerable time it is of a brown colour. It is transparent, with an ... odour, and an acrid, warm, bitter taste. It is heavier than water, its specific gravity being 1·043.

C. P.—Oil of bitter almonds, as prepared by distillation, consists of from 8·5 to 14·28 per cent. of pure hydrocyanic acid, united with benzoic acid, benzoin, benzamide, and hydruret of benzoil. Its poisonous and medicinal properties depend on the hydrocyanic acid, which may be completely removed from it by repeated agitation with a solution of caustic potash. The oil is very soluble in alcohol and ether; by agitation with water, a portion of the hydrocyanic acid is dissolved out, and the water acquires the peculiar odour and taste of the acid.

Th. E.—As the medicinal properties of the oil depend on its hydrocyanic acid it contains, its effects and uses are of course similar to those of that acid, for which it has been proposed as a substitute; but, as its strength is very variable, it should not be employed for internal use. It should be borne in mind that the oil of bitter almonds is at least four times the strength of officinal prussic acid.

Amygdalus Persica, foliis, D. *Peach Leaves.* Leaves of the ... (*Persica Vulgaris*, Miller).—The peach-tree, originally a native of Persia, is now cultivated extensively in this country; it belongs to the natural family *Rosaceæ*, and to the Linnæan class and order *Icosandria Monogynia*.

Prep.—A wine-glass full, with lukewarm water, or infusion of linseed, for a clyster.

P. & C. P.—Peach leaves, when bruised, emit the peculiar flavour of the fruit; by distillation with water they yield a small quantity of volatile oil, which contains hydrocyanic acid. The active principles are extracted by boiling water.

Th. E.—The medicinal properties of peach leaves are ... similar to those of the bitter kernel, but weaker in degree. ... frequently ... and ... for ...

[illegible] hemlock, which, when [illegible]
[illegible] ment, for since the discovery [illegible]
[illegible] plant, it has been satisfactorily [illegible]
[illegible] a moderate degree of heat, when [illegible]
[illegible] it to undergo decomposition, and [illegible]
[illegible] preparation most generally employed, [illegible]
[illegible] to the directions of the Dublin and London [illegible]
deprived almost completely of its medicinal virtues. I have frequently satisfied myself by the potash test of this, but little faith is placed in the virtues of hemlock as a powerful and alterative in the treatment of glandular enlargements, of scrofulous affections, of secondary and chronic skin diseases, for which it was strongly recommended. I have myself derived very beneficial results from the use of hemlock in many painful affections, some of which were attended with inflammation; the preparation which I employed was the expressed juice carefully prepared from the fresh leaves and tops of the plant when it was in full flower. The diseases in which I have found it were the various rheumatic affections, both acute and chronic, neuralgia, and senile gangrene; in all of which it appeared to alleviate pain and diminish nervous excitement. I am inclined to think from the experience which I have had of it, I am inclined to think that hemlock will be found an anodyne and sedative of great power, and that it deserves to be more generally used than it is at present. Hemlock has been employed externally in the form of cataplasm or ointment to cancerous and painful ulcerations, and in glandular enlargements. In two cases in which the [illegible] expressed juice of hemlock had been persevered in for some time, and the dose much increased, the patients complained of giddiness, with a painful feeling of constriction of the pharynx, so as to compel its use to be suspended.

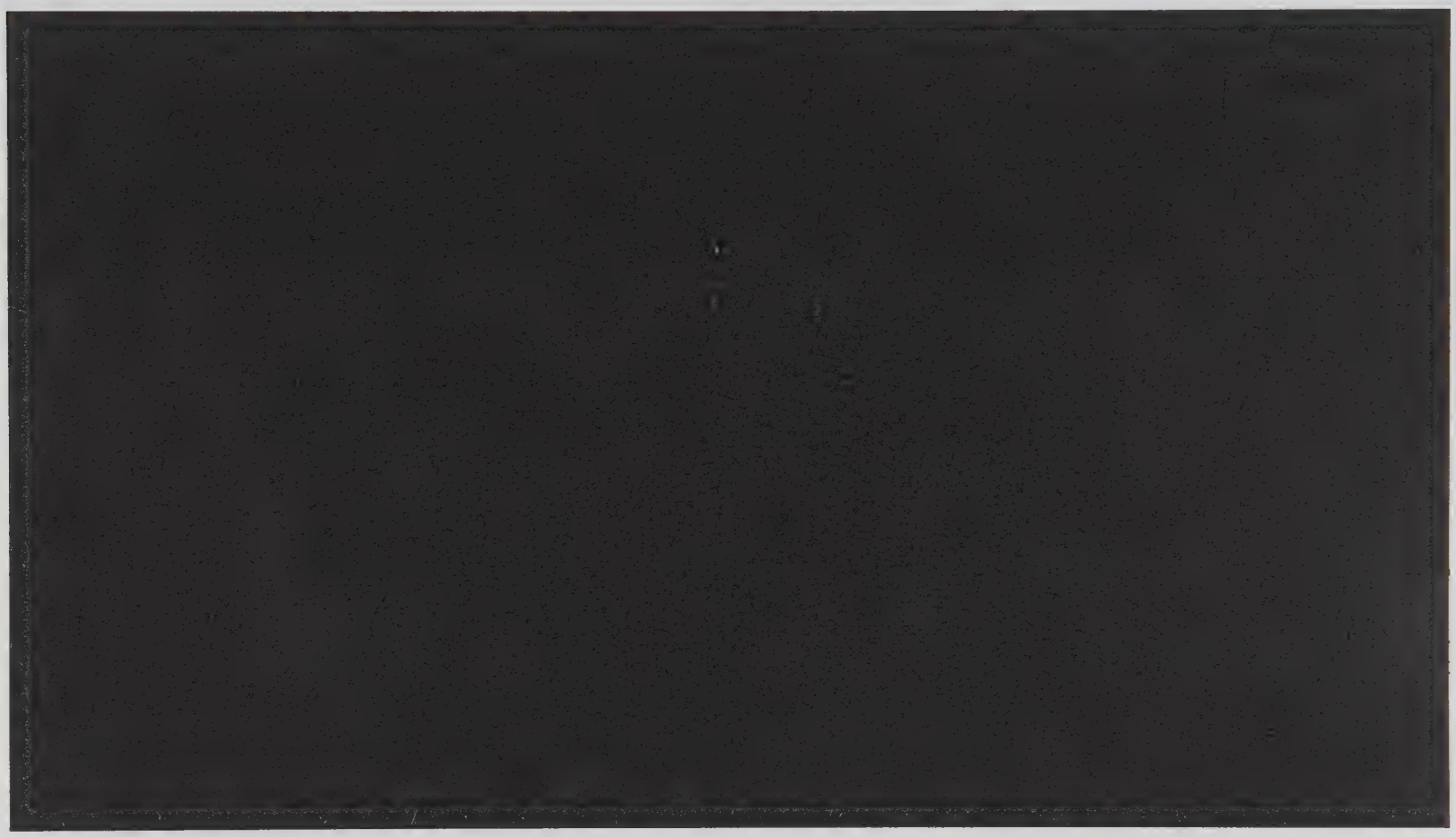
Dose and Mode of Administration.—The dose of the powder of the leaves, a beginning with gr. v. to gr. x., three or four times a day; of the powder of the root, gr. iij. to gr. vi. may be given; the quantity should be gradually increased.—*Extractum Conii*, L. E. *Succus Spissatus*, D. ("Fresh hemlock leaves, ℥j.; bruise them, sprinkling them with water, in a stone mortar; then press out the juice, and evaporate it, unstrained, to a proper consistence," D. L. "Take any convenient quantity; beat it into a uniform pulp with a little water, express the juice, and filter it. Let this juice be evaporated to the consistence of firm extract, either in a vacuum by the application of heat, or spontaneously in shallow vessels exposed to a moderate current of air, freed of dust by gauze or screens. This extract is of good quality only when a very strong odour of conia is developed on its being carefully triturated with [illegible]." E.) Dose, gr. iij. to gr. v., gradually increased [illegible]

is always to some extent precipitated, and does not keep well.—*Tinctura Conii*, D. L. E. ("Hemlock leaves, dried [or fresh], 3iv; proof spirit, Oj; macerate for 7 [14, L.] days and strain," D. L. "Powder the dried leaves, and a mixture of distilled water, Oss; rectified spirit, Oss; bruise the leaves, express the juice strongly; bruise the residue, pack it firmly in a percolatory, transmit first the tincture of cardamoms, and then the rectified spirit, allowing the expressed juice to mix with the expressed juice as they pass through; add sufficient water through the percolator for passing through the same quantity in the residuum. Filter the liquor after agitation," E.) The tincture of the Edinburgh College is a much superior preparation to that of either Dublin or London, as being prepared from the fresh leaves; nevertheless, as the process requires some plenty of manipulation, it is apt to vary in strength, which the presence of the tincture of cardamoms will prevent us from judging of; the dose of it is from gtt. xx to mxl., gradually increased.—*Succus Conii*, D. ("Fresh hemlock leaves, any quantity; express the juice, let it stand for 48 hours, pour off the clear supernatant liquor, and add to it a fifth part of rectified spirit.") This is the most eligible of the preparations of hemlock, as it is of a uniform strength, and keeps well. Dose, min. xx, gradually increased to fʒj or fʒij three times daily, its effects being carefully watched.—*Pilulæ Conii*, L. ("Extract of hemlock, ʒv.; ipecacuanha, powdered, ʒj; balsam of sawdust, as much as may be sufficient to form a mass, which divide into pills of three grains each.") Dose, gr. v, three times a day, intended for an anodyne and experiment in hemoptysis, hæmaturia, and the incipient stage of phthisis, but from the observations made above on the extract, its powers must be very feeble.—*Cataplasma Conii*, D. L. ("Hemlock leaves, dried [or fresh] with a gentle heat, 3iss.; boil down to fʒij, and to the strained decoction add as much of the same kind of powder as is sufficient to form a cataplasm," D. "Extract of hemlock, ʒij; water, Oj; rice flour, as much as may be sufficient to produce a proper consistence," L.) A soothing poultice to painful chronic glandular enlargements. The fresh leaves, bruised, would form a much better application.—*Unguentum Conii*, D. ("Fresh hemlock leaves, dried and prepared hog's lard, of each, fʒvj; boil the leaves in the lard until they become crisp, then express through linen.") An excellent but sedative and anodyne ointment.—*Emplastrum Conii*, E. ("Yellow wax, 2 parts; resin and olive oil, of each 1 part; melt together, and add to the mass when it begins to cool powdered hemlock, 2 parts; mix thoroughly.") For narcotic effects it joins

INDICATIONS.—The narcotic alkaloids and volatile oil being

In cases of poisoning with hemlock, the same treatment is to be followed as in poisoning with [illegible]

CAUTIONS.—Consult [illegible]



recommended by Dr Hastings, of London, as a remedy [illegible] phthisis. We have not been able to ascertain with [illegible] what is meant by *wood naphtha*, for chemists have never [illegible] that term to the products of the distillation of wood; but [illegible] variety of pyroxylic acid have been in the habit for some [illegible] past to call (improperly) "*Naphtha*" (the spirituous liquid [illegible] of Methylene) which passes with the first portions of [illegible] while distilling the *acid liquor* obtained by the carbonization [illegible] in a close vessel. In that state it contains alcohol, acetone [illegible] and wood, according to Kane. To obtain it pure, Dumas [illegible] cts the impure spirit into a retort with an excess of [illegible] chloride, and distils the mixture in a water-bath as long as [illegible] water is disengaged. A quantity of water equal to the [illegible] employed is then added, and the distillation continued. The [illegible] is now pure pyroxylic spirit, carrying along with it a little water, which is removed by a second distillation with quicklime.

Another substance (*methol*), also, the product of [illegible] tion of wood, having a close analogy to naphtha [illegible] has been given as the wood naphtha of Hastings. [illegible] Kane, it contains no oxygen, its formula being C_2H_4, [illegible] 360°, and possesses the general characteristics of [illegible] It appears to possess expectorant and sedative properties, [illegible] ing the bronchia to action; has no specific effect on the [illegible] formations in the walls of the lungs, as described by Dr H.

Pyroxylic Spirit has been employed in lieu of [illegible] in the U. S. to considerable extent, though without any marked [illegible] except in bronchial irritation, in which it is extolled. It is a [illegible] colourless fragrant odour; its specific gravity is 0·7962, [illegible] 132° : it dissolves in water, alcohol, and ether. It may be [illegible] from perfectly dry acetate of soda, and rectified from [illegible] lime.]

PICRAENA EXCELSA. *Cyanide of Potassium.* (*Cyanuret of Potassium; Hydrocyanate of Potassa*)

[illegible]

P. P.—Cyanide of potassium, thus procured, is a whitish, semi-transparent, crystalline mass, having an enamelled appearance. It is inodorous when quite dry, but if moistened it emits the odour of hydrocyanic acid. It has an acrid, alkaline, somewhat bitter taste.

C. P.—It is composed of one eq. of potassium, and one of cyanogen. Exposed to the air, it absorbs moisture and deliquesces slowly, being converted into carbonate of potash by the absorption of carbonic acid from the atmosphere, and the evolution of hydrocyanic acid; it is fusible without change by heat, and sublimable over by a white heat, provided air be excluded. This salt is very soluble in water, but is insoluble in strong alcohol. By solution in water it is converted into the hydrocyanate of potassa.

Adulterations.—As commonly met with in the shops, this salt is seldom fit for medicinal use. When pure it should be perfectly white, and afford a perfectly colourless solution with distilled water; if it be at all yellow, it contains iron, which diminishes much its activity. It should also be perfectly free from odour, as, if it have any smell of prussic acid, it contains water, is of uncertain strength, and is, perhaps, undergoing slow decomposition.

Uses, &c.—Cyanide of potassium possesses precisely similar properties to the hydrocyanic acid, as a substitute for which it is used in medicine. Its advantages over that acid are its invariable strength, and its permanence of constitution, when properly prepared and carefully preserved; but its great liability to deliquesce has prevented its general introduction into the practice of medicine. To remedy the defect, Mr. Donovan has suggested "that small portions should keep the cyanide of potassium in small, wide-mouthed, well-stoppered bottles, not quite filled with the salt, but completely filled with alcohol of 0·900; which, when of due strength, exerts scarcely any solvent power on the cyanide, but will effectually preserve it from the deteriorating influence of the air. When a few grains are required for use, they may be drawn up by an iron wire like potassium out of naphtha, and heated in a spoon for a moment, to drive off the adhering alcohol."

D. & M. or Ads.—The dose of the pure cyanide of potassium is from one eighth to one fourth of a grain. If it be desirable to administer the prussic acid contained in the salt in a free state, this may be done by prescribing it in combination with any weak acid, as with citric acid, in the form of lemon juice, or syrup of lemons.—*Syrup of Cyanide of Potassium*, Magendie. (Cyanide of potassium, gr. viij; simple syrup, ℥vj; mix.) Dose, ℥ij to ℥vj. It is always better to prescribe this preparation in the form of draughts, in consequence of its liability to become decomposed.—*Cautions &c.* Toxicum. (Cyanide of potassium, gr. vij.; distilled water, alcohol, and sulphuric ether, of each, ℥ij.; mix.) For external use only. One eighth of a grain of pure cyanide of potassium is equal to about one ounce of the medicinal prussic acid of the Dublin Pharmacopœia.

Incomp.—All acids and acidulous salts.

TABACUM, L. P. *Nicotiana tabacum*, Willd. D. *Nicotiana* (Tourn. Inst. t. 32, *Linn. Hort. Cliff.* t. 2) *of Nicotiana Tabacum*.—A native of [illegible], belonging to the natural family *Solanaceæ*, and to the [illegible] class and order *Pentandria Monogynia*.

S. C.—[illegible]

M. P.—[illegible]

P. P.—Virginia tobacco leaves are of a dark brown [illegible] yellowish spots, and have an unctuous feel. Their odour [illegible] fœtid, heavy, and narcotic; their taste bitter and nauseous.

C. P.—It is composed of a peculiar, liquid, [illegible] alkaloid, which has been named *nicotina*; of a [illegible] *nicotianin*; of bitter extractive, gum, chlorophyle, [illegible] men, gluten, starch, malic acid, and some salts. Its properties depend on the alkaloid and the volatile oil; the former is [illegible] water, has the odour of tobacco, and an acrid, burning taste, so intense as to communicate it perceptibly to 10,000 parts of water; the latter has also the odour of tobacco; its taste is [illegible] and nauseous, leaving an unpleasant sensation in the throat. [illegible] in recent tobacco leaves, and, therefore, must be developed by the process of drying. An *empyreumatic oil* is produced by burning tobacco from the decomposition of some of its constituents. It is usually found in pipes which have been used some time, and [illegible] it is a very active poison. Tobacco leaves yield their [illegible] readily to boiling water, alcohol, and spirituous liquors.

The adulterations of tobacco are unimportant in relation to its medical employment.

TA. P.—Tobacco, taken internally in large doses, produces the cerebral narcotico-acrid poison; the most marked symptoms of which are, fainting, great exhaustion, general relaxation of the voluntary and involuntary muscles, extreme depression of the [illegible] tory powers (marked by the feeble, fluttering pulse, cold [illegible] ness, paleness of the face, &c.), convulsions, paralysis, and death. In very small doses it is said to act as a diuretic, and sometimes as a laxative. In full medical doses, it operates as a sedative of the vascular system, and also of the cerebral functions. It is principally used in medicine to relax the muscular [illegible] is employed in the form of enema, in strangulated hernia, to relieve obstruction of the bowels from other causes, as from [illegible] from spasmodic stricture of the urethra, or from retention of the neck of the bladder, to obviate convulsions, as in tetanus and in tetanus, in all of which diseases its beneficial effects depend on its relaxing influence over the muscular system. It is frequently employed as a diuretic in dropsy, and also as a [illegible] remedy, but in the present day it is rarely used for [illegible] As an external agent the infusion or decoction [illegible]

tumors of consequence in any of the cases above mentioned in which the sedative action is indicated; and in America an ointment is used to prevent cutaneous diseases, especially those of the scalp, but as we require very great caution, as it has in some instances produced fatal results for the same reason, although a certain application for the destruction of vermin, the infusion of tobacco is but seldom employed for that purpose.

D. & M. or Anm.—The use of tobacco requires great caution, as, in order to produce a sedative influence, its poisonous effects must be partially subdued. *For* the preparation of an enema of tobacco, formulæ are given in the three British Pharmacopœias, but in no instance should a larger quantity be used at first than from gr. xv. to gr. xx. infused in Oj. of boiling water, for cases are on record where as small a quantity as 3j, and even ss., have proved fatal.—*Decoctum Tabaci*, L. E. *Infusum Tabaci*, D. (Tobacco, fʒ. iss. to ibss., E.); boiling water, by measure, Oj. (Oʒ. l.,) fʒviij. E.); macerate (digest in a close vessel, D.) for one hour (half an hour, L.), and strain.)—*Vinum Tabaci*, L. (Tobacco, ʒj.; sherry, fʒxij.; digest for seven days; strain, express strongly the residuum, and filter the liquor.) Sedative and diuretic, but rarely used. Dose, min. x. to gtt. xl.

[*U. S. P.—Tobacco Ointment.* Fresh tobacco, cut in pieces, 1 oz.; lard, 4 pounds. Boil the tobacco in the lard over a gentle fire till it becomes friable, then strain through linen. An excellent application in itch scabs, and various obstinate eruptions upon the skin, but requires caution in its use.]

In cases of poisoning with tobacco, if the poison have been swallowed, emetics should be immediately administered; and in all cases the most powerful stimulants, both external and internal, should be employed. The vegetable astringents have been proposed as antidotes for tobacco, tannin forming an insoluble precipitate with nicotina.

ZINCI CYANURUM. *Cyanide of Zinc.* (*Cyanuret of Zinc; Hydrocyanate of protoxyde of Zinc.*)

PREP.—Pass the vapour of prussic acid into distilled water in which is suspended or partially dissolved hydrated oxide of zinc, which is obtained by adding to a recent solution of sulphate of zinc to a solution of chloride of zinc.

P. & C. P.—It is a solid white salt, inodorous and insipid; is composed of one eq. of cyanogen, and one of zinc; and is insoluble in both water and alcohol.

Th. T.—This preparation has been proposed on the Continent as a substitute for hydrocyanic acid or the cyanide of potassium. The dose is from gr. ¼ to gr. ½, but its insolubility renders it an objectionable preparation. In Germany it has been employed as an anthelmintic for children.

ZINCI PEROXYDUM (*Peroxyde of Zinc*).

PREP.—[A solution of a neutral deutoxysulphate solution of zinc, with excess of ammonia, . . . the liquor supernatant is then left to evaporate gradually,

[illegible]

P. & C. P.—It is a white, insoluble, almost amorphous powder, somewhat soluble in the stronger acids, without [illegible] of hydrocyanic acid in the cold; but by boiling, that acid is [illegible] disengaged.

To H.—Adapted to nervous diseases, cardialgia, epilepsy, pyrosis, chorea, neuralgia, and spasmodic affections [illegible] which it is often an efficient remedy in American practice.

D. & M. or Ann.—The dose should begin with 1 grain or [illegible] ary, though from 2 to 6 grs. have been given to empty the stomach at a dose. When the small dose is given it should be repeated 3 or 4 times a day, and gradually increased. It is best given in pill or powder, being insoluble. As this article is often [illegible] founded with the more active cyanide of zinc, it should be distinguished in prescriptions by calling the one zincum ferro-cyanidum *sine ferro*, and the other zincum *ferro*-hydrocyanicum.

It has been recommended as a collyrium in scrofulous [illegible] mia, catarrhal and rheumatic affections of the eyes, &c., and for this purpose is suspended by mucilage of gum-arabic, and [illegible] by tincture of opium, in the proportion of 1 to 3 grs. to the oz.]

[ZINCI IODIDUM (*Iodide or Iodaret of Zinc*).

Prep.—Boil together iodine and zinc in nitrous proportions, or rather with a excess of zinc, in a flask of water, down to dryness, and exclude the moisture.

P. & C. P.—It forms beautiful, colourless, prismatic crystals; it is, however, very deliquescent, and cannot easily be retained in a solid form, and is liable to undergo spontaneous decomposition. By being heated in open vessels, it is resolved into iodine and oxyde of zinc.

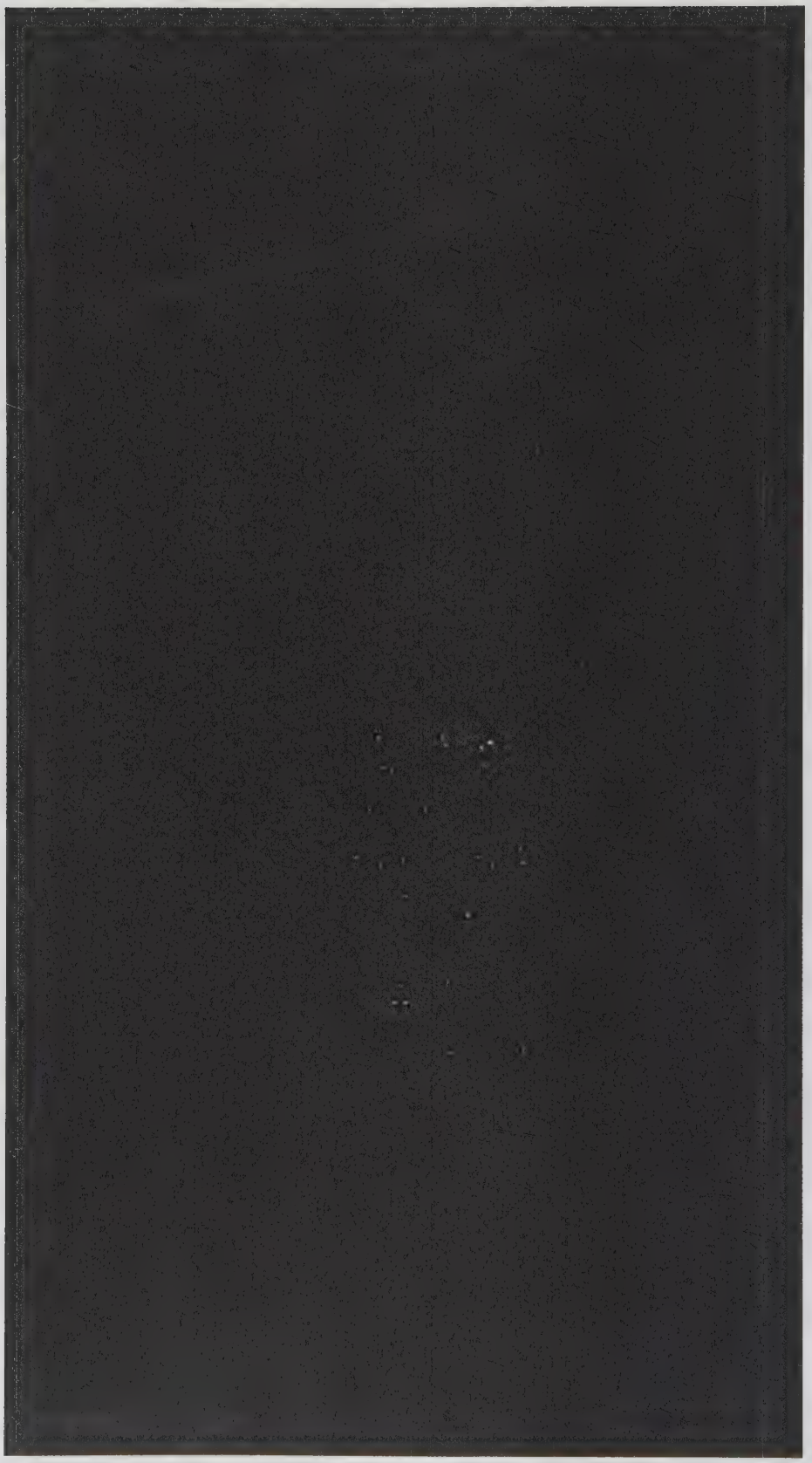
To P.—It is used externally, for the same purposes as [illegible] potassium, the ointment being composed of 1 drachm to an ounce of lard. As a collyrium and injection, 1 gr. to the oz. of water, is a valuable astringent.]

CHAPTER XVIII.

SIALOGOGUES.

(Mercurialia.)

Sialogogues are substances which by a local [illegible] augment the secretion of saliva. [illegible] so-called remedy or specific antilypemic is [illegible] mercury, gold, &c., which generally produce [illegible] ptyalism, when their internal use [illegible] first, by their constitutional powers [illegible]



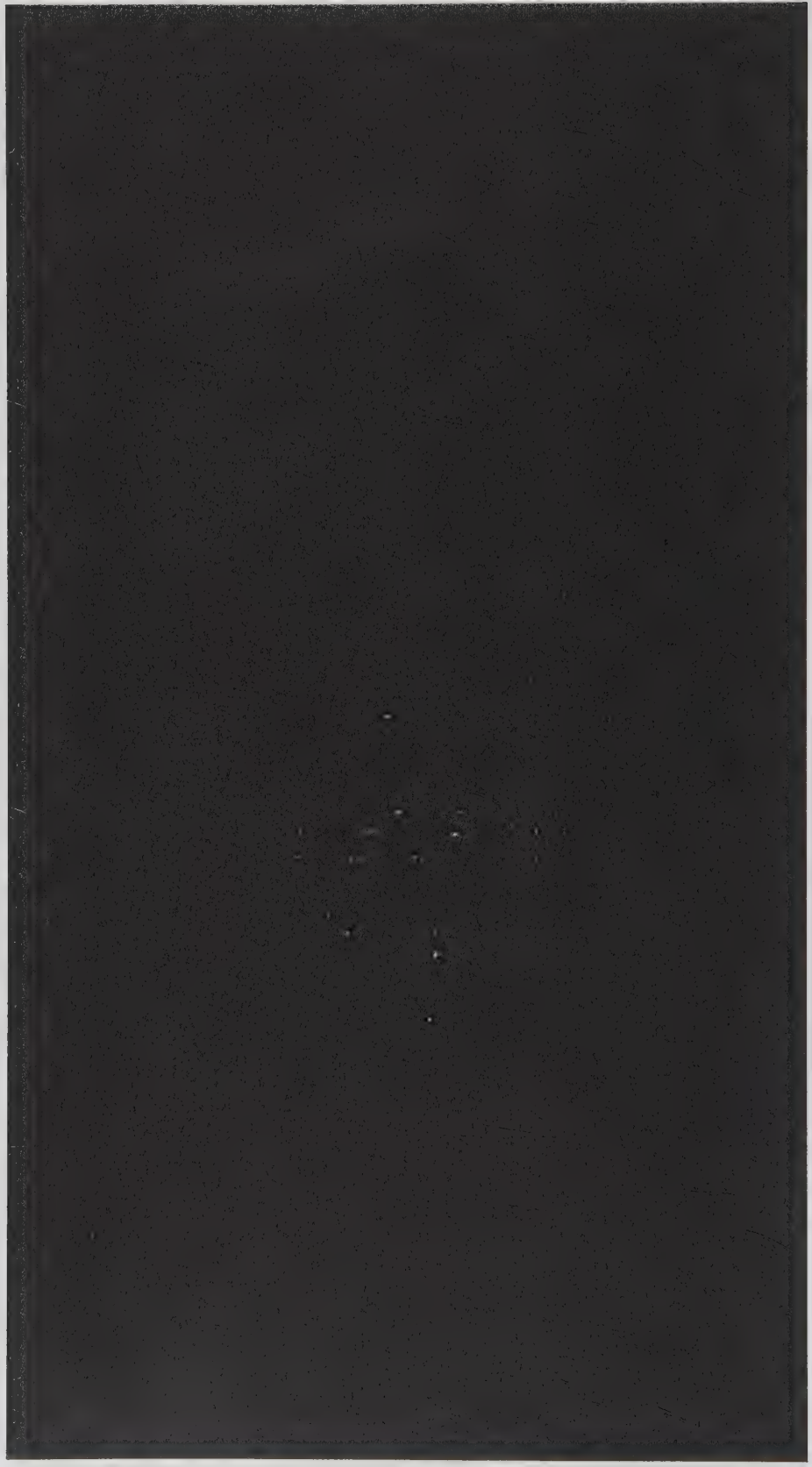
CHAPTER XIX.

GENERAL STIMULANTS.

Excitantia Tonica.

It is difficult to define what is understood in the practice of physic by the term Stimulant, excitement of the vital energies is produced by such different means under different circumstances, and in different classes of remedies, therefore, it is more necessary to know the truth of the maxim, that medicines act upon the living body, than their mode of action when administered externally, general stimulants resemble in some respects tonics; thus, after the use of their administration, a feeling of ease or increased power is produced, which, however, is not permanent, but is almost immediately followed by a corresponding depression of vital power; stimulants, also, are more immediate and more universally perceived by the senses than those of tonics. Many of the remedies contained in this division are closely related to narcotics, for example, opium and the others, the secondary effect of each of which is produced if given in large doses, is to produce sleep and coma; they do not, however, appear to be, as with narcotics, from any direct impression on the nervous system, but rather to result from the previous excitement of the vital energies. The great number of remedies contained in this class and the material difference of their effects in relation to the particular effects which they produce in the animal economy, preclude us from laying down any general rules for their administration in disease. The peculiarities of their medical operations will be more conveniently considered when treating of the therapeutical effects of each article.

[The difficulties which environ the whole subject of Materia Medica in the department of the Materia Medica are so obvious and confessedly so insurmountable in the present state of our knowledge that a failure to classify or designate with accuracy the precise medicinal operation of any drug or group of articles employed in medication, may be ascribed rather to the inherent difficulties of the subject, than to any deficiency of research or ability in the author. It is but intended [illegible] to the latter [illegible] and even [illegible] withhold the acquirement of [illegible]



compose into acetic acid and alcohol; the alcohol [illegible] with great facility.

Th. E.—Nitric ether is an agreeable but mild general stimulant, at one time much used on the Continent as a diaphoretic and gives very similar effects, at present it is chiefly employed as an [illegible] ingredient in stimulating liniments.—*Compound Spirit of Nitrous Ether.* (Soap and camphor, of each, 2½ parts, nitric ether 1 part, dissolve in a water-bath, and add oil of origanum, etc.) This is an excellent stimulating liniment in rheumatic and [illegible] pains in general.

Alcohol nitrosum. D. *Nitrous ether. Hyponitrous ether. Nitric ether; Nitrite of oxide of ethyl.*

[illegible] Dist.—Take of nitric acid, purified, [illegible] alcohol, [illegible] each a sufficient quantity; [illegible] a retort, connected with a [illegible] cool place; to the alcohol add gradually the nitric acid, and distil [illegible] the alcohol and the nitric acid have passed over. Shake the product with water, to which a little carbonate of potash has been added, and separate the ether. Lastly, distil it from a little chloride of calcium, and preserve it in a well-stopped bottle.

P. P.—Nitrous ether is a volatile liquid, of a pale yellow colour, with an agreeable, very fragrant odour, and a sweetish, somewhat acrid taste. When quite pure, its specific gravity is 0.947 at 60°.

C. P.—Its composition is $C^4H^5O.NO^3$ or $C^4H^5O+NO^5$. It boils at 70°, and is very inflammable, burning with a bright flame. It requires for its solution 48 parts of water, but is miscible in all proportions with alcohol and ether. It is readily decomposed by the alkalies.

Th. E.—Nitrous ether is a general stimulant, resembling in its operation sulphuric ether; but, in consequence of the difficulty of preparing, as well as its tendency to decomposition by keeping, it is seldom if ever used at the present day. The dose of it would be from [illegible] to [illegible], frequently repeated.—*Spirit of Nitrous Ether* (described in the division *Diuretics*) is sometimes employed as a stimulant in flatulent colic and is sometimes given in the dose of from 1 oss. to 2ij. repeatedly.

Æther nitrosus. D. L. E. [and U. S. P.] *Nitrous ether. Oxide of ethyl.*

[illegible] Dist.—[illegible] nitrite of potash, powdered, [illegible] each a sufficient quantity; [illegible] a retort, connected with a [illegible] cool place; to the alcohol add gradually the nitric acid, and distil [illegible] the alcohol and the nitric acid have passed over. Shake the product with water, to which a little carbonate of potash has been added, and separate the ether. Lastly, distil it from a little chloride of calcium, and preserve it in a well-stopped bottle.

[illegible] *Absolute alcohol of the density* [illegible] *a small proportion of water, density* 810, D.; [illegible]

"Rectified spirit, conc. j.; pearlashes, dried and still warm, [illegible] dried, ℥ss.; add the pearlashes in powder to the spirit, digest [illegible] frequently agitating, for 7 days; draw off the supernatant [illegible] with the muriate of lime. Lastly, distil with a moderate heat [illegible] the retort begins to thicken." *Lond.* "Rectified spirit, [illegible] ℥xij.; put the chloride of calcium into the spirit, and when [illegible] distil." *Edin.* "Rectified spirit, Oj.; lime, ℥viij.; [illegible] small fragments, expose the spirit and lime together to a [illegible] moisture till the lime begins to slack; withdraw the heat, [illegible] preserving the upper part of the matrass cool with damp [illegible] water refrigeratory, and with a gradually increasing heat distil [illegible] of the alcohol should not exceed 796; if higher, the distillation [illegible] began before the slacking of the lime was altogether finished."

Alcohol is a transparent, colourless liquid, with a pungent, [illegible] odour, and an acrid, burning taste. Its density [illegible] the quantity of water it contains; that of the strong [illegible] pharmacopœias has been given above. Rectified [illegible] (*Alcohol rectificatus*, D. L. E.) is an article of the Materia [illegible] Dublin College fixes its specific gravity at ·840 at 60° [illegible] London College at ·838 at 62° F.; and the Edinburgh [illegible] ·835 at 60° F.—Proof spirit (*Spiritus tenuior*, D. L. E.) [illegible] of the Materia Medica, but, as met with in com- [illegible] unfit for medical use, in consequence of its containing [illegible] The three colleges have, therefore, directed it to be [illegible] by mixing together 5½ parts, *by measure* (Ov., L.; Oviij., [illegible] rectified spirit, with 3 parts, *by measure* (Oiij., L. E.), of [illegible] water, at a temperature of 60° (62°, L)." Its specific [illegible] according to the laws of the kingdom, is 920 at 60° F.; [illegible] consisted of this strength by the directions of the London [illegible] the Dublin College fixes it at ·919, the Edinburgh at ·918.

Absolute alcohol is a *Hydrated oxyde of ethyl*; its com- [illegible] C^4H^5O+HO or $EO+HO$. It boils at 173°; it is highly [illegible] and burns with a pale blue flame, free from smoke, [illegible] carbonic acid being the products of its combustion; it [illegible] been frozen. It attracts water from the air, and, there- [illegible] becomes weak if kept in an imperfectly-closed vessel; it is [illegible] with water in all proportions, a disengagement of heat, a [illegible] of bulk, and an increase of density accompanying this [illegible] It dissolves the caustic alkalies and alkaline sulphu- [illegible] dissolves all the deliquescent inorganic salts, except [illegible] of potash, but none of the salts which are insoluble or [illegible] in water, nor efflorescent salts. It likewise dis-

solves many vegetable substances, as all essential and most fixed oils, the vegetable alkalies, resins, extractive, &c., for the purpose of which purposes it is employed in pharmacy. Alcohol, or the preparations of ardent substances which are commonly known by that name, derive their importance in medicine from the peculiar influence which they exert over the animal economy. *Rectified* and *Proof spirit* have similar properties to one another; the former is milder, their boiling point higher according to the ratio of dilution, their inflammability less, and the quantity of light with which they burn deeper yellow the more water they contain. *Proof spirit* is defined by law to be such that, at the temperature of 51° F., 13 volumes of it weigh exactly as much as 12 volumes of water. 100 parts of spirit of this strength consist of 49 parts by weight of absolute alcohol, and 51 parts by weight of distilled water at 60° F.

Administration.—The specific gravity is a sufficient test of the strength of alcohol and the weaker spirits; but in ascertaining their density, the temperature should be at the same time observed, as the lower the temperature, the greater will be the density of the spirit. The rectified spirit of Edinburgh contains 84 per cent. by weight of absolute alcohol, and 16 per cent. of water. Proof spirit is composed of 49 per cent. of absolute alcohol and 51 per cent. of water. The specific gravity of the former is 0·838, and of the latter 0·920. The *test of proof*, a contemporaneous decision derived from the ebullition of the spirit, is now disused. The presence of water is readily detected by the addition of anhydrous carbonate of potash, which, when added to alcohol, sinks to the bottom, and forms a distinct layer. The *Edin. Pharm.* directs: "Spirit, treated with 25 minims of solution of nitrate of silver (1 gr. to 3ss. of water), exposed to light for 24 hours, and then passed through a filter purified by washing with acid, so as to separate the black powder which forms, ought to suffer further change when again exposed to light with access of air." This same test is applicable to both alcohol and proof spirit.

Th. II.—Alcohol is the stimulating principle of all spirituous liquors; in moderate doses properly diluted, it acts as a powerful stimulant, exciting particularly the vascular and nervous systems in somewhat larger doses, it prolongs the wakefulness of the intellectual faculties; and in excessive doses it acts as a powerful narcotic poison, rapidly causing death, preceded by slow pulse, stertorous breathing, and coma. This effect is most usually observed when a large quantity of ardent spirits has been drunk at once. As a stimulant, alcohol is employed in medicine to support the vital powers in the advanced stages of fevers, particularly those of a typhoid character. For this purpose brandy or whiskey are usually preferred, as the wine is generally prescribed. (See Vinum.) It is also used in flatulent colic, in indigestion, in vomiting, and in diarrhœa. As an external stimulant, it is a common ingredient in many lotions, spirits and liniments, for many forms of external inflammation, for erysipelas and erythema, for various skin diseases, for bed-sores, for excoriations in parts exposed to prolonged pressure, and sometimes for the region of the heart in syncope and palpitation. Diluted with six parts of water, it is frequently used as an injection after tapping for the radical cure of hydrocele. Diluted with twenty parts of water, it is employed as a wash for the eyes in cases of ophthalmia, and for the genitals in gonorrhœa.

form of punch, the quantity which should be given depends so much on the circumstances of each particular case, that it would be impossible to lay down any general rule on the subject here. In the fever which proved so fatal to the British Legion in Spain in the year 1835, Dr. Lardner frequently gave as much as 32 ounces of brandy in the 24 hours.—*Misturæ spiritus vini gallici*, L. (Brandy, 1 to 4; cinnamon-water, each, ℥ij.; the white of two eggs; gum-arabic, 3ss.; oil of cinnamon, min. ij.; milk.) An agreeable and useful combination, in doses of ℥ss. to ℥iss.

In proceeding with ardent spirits, the contents of the stomach should be immediately evacuated by means of the stomach-pump, and external stimuli, especially the cold affusion, assiduously employed. The coma of ordinary intoxication is best treated by the external use of ammonia, or of the solution of the acetate of ammonia; if apoplectic symptoms be present, cold lotions to the head, the application of leeches to the temples, and warmth to the extremities, will be found most useful.

Acidum Acetosum, L. E. Acidum aceticum dilutum, D. Gum ammoniacum, L. E. (*Gummy resinous exudation, E.*) *of* Heracleum Gummiferum, L. E.—*of* Heracleum Gummiferum, D.—The plant inferential by the London and Edinburgh Colleges, which is the true source of this drug, is a native of Persia, belonging to the natural family, Umbelliferæ, and to the Linnæan class and order Pentandria Digynia.

[illegible] A glaucous-green plant, 4 to 7 feet high; stem about 4 inches in diameter, hollow, knotty, 6 feet long, or thereby, terminating in the head; flowers white, in umbels; fruit ovate.

[illegible] *of Persia.*—The gummy juice which pervades the whole plant exudes on the slightest puncture. During the warm season the root is laid bare by removing the earth, by which it is pierced in different parts, through which the juice exudes, and soon concretes into a hard gum, which is collected by the country people.

E. P.—Ammoniac is met with in various-sized, roundish tears, or in masses composed of the tears agglutinated together. They are of a yellowish or reddish-yellow colour externally; internally they are white and shining like enamel, hard and brittle, and vary in size from that of a small pea to that of a walnut. The odour is peculiar, fatty nauseous, more powerful when heated; the taste is bitter and disagreeable.

E. P.—Ammoniac is a gum-resin containing about 80 per cent. of resin and about 18 per cent. of gum, with a trace of volatile oil. It is softened by exposure to heat, is inflammable, and burns with a white flame. It does not dissolve in water, but is miscible with it, forming a milky emulsion. It is soluble in [illegible] and alcohol.

E. P.—[illegible]

the cause and generation. In the present day it is very generally and very properly employed only as an external application in the form of cataplasm, to scrofulous tumours, chronic phlegmons, and painful glandular swellings, &c., in which it proves highly useful.

D. & M. or Aqua.—Take x. to iss., in pills, or make into an emulsion with milk or water.—*Mistura Ammoniaci*, D. L. "Gum ammoniac, 3ij.; pennyroyal water, 3viij.; rub the gum well in the pennyroyal water gradually poured in, until the mixture assumes the appearance of milk, and strain through linen." D. "Ammoniac gum, 3vi.; water, Oj.; rub the ammoniac with the water gradually poured in, until they are perfectly mixed." L.) Dose, 3ss. to 3j.—*Emplastrum Ammoniaci*, D. L. E. ("Pure gum ammoniac, in powder, 3vi.; vinegar of squill, 3ss." D. "Ammoniac gum, in powder, 3iij.; squill (fifth ed. E.), 3ij." L. E. "Dissolve the ammoniacum in vinegar, then evaporate to the proper consistence."—*Emplastrum gummosum*, E. "Ammoniac, galbanum, and burgundy pitch, of each one part; the gums to be softened, and strained through; then add the pitch, and evaporate to a proper consistence."—*Emplastrum gummosum*, L. "Ammoniac, galbanum, and burgundy pitch, of each one part; the gums to be softened, and strained through; then add the pitch, and evaporate to a proper consistence." These plasters should be spread on leather for application: when left on for some time, they often produce a crop of small pimples.

Ammoniæ carbonas aqua, D. Ammoniæ liquor, L. Ammoniæ aqua, E.—*Diluted aqueous solution of ammonia* (the carbonate, fifth edition L.) is a general stimulant, quickly diffusible in its action. It is principally used to replace even a slight great deficiency of nervous power, in the advanced stages of continued fever, when all inflammatory action has subsided; in the stage of intermittents, in the eruptive fevers when the eruption has receded from the skin, and in the latter stages of pneumonia if there is much depression of the vital powers. Owing to its volatile quality, ammonia is also found useful to relieve those pains which depend on the increased irritability that accompanies depression of the nervous system, as in hiccough, vomiting, pains, and some forms of hysteria, and of asthma. It is the best internal stimulant that can be employed in the cases of narcotic poisoning and in poisoning with *sedatives*. As an external stimulant, the vapour of ammonia is inhaled in syncope, and in asphyxia. The vapour of ammonia may be given as a stimulant, as the carbonate is prescribed in the division *Antacids*, but it should be given frequently and with short intervals.

Ammoniæ carbonas.—Sesquicarbonate of ammonia (prescribed in the division *Antacids*) is employed as a stimulant, in the same manner as the aqueous solution of ammonia, in doses of 10 to 20 grains. The chief advantage that attends the use of the carbonate is its convenience for extemporaneous prescription.

[illegible] D. *Hydrosulphuret of ammonia.*

[illegible] greenish-yellow, very fetid liquid, emitting sulphuretted hydrogen gas, having an acrid, very disagreeable taste. It is a solution of the neutral hydrosulphate of ammonia. Exposed to the air, it deposites sulphur, owing to the escape of some of the ammonia; and, on the addition of any acids, sulphuretted hydrogen gas is evolved. [illegible] "Take of iron, in coarse powder, 5 parts; sulphuric acid, 4 parts; water of caustic ammonia, 4 parts; put the sulphuret into a glass flask, on it the acid previously diluted with water, and having fitted a tube, transmit the gas through the water of ammonia. Lastly, to promote the process apply a moderate heat to the retort."

The preparation has nearly fallen into disuse. It was employed with the idea of deoxygenizing the system in order to diminishing the morbid appetite of that disease. It has some slight stimulant properties, but might well be omitted in the pharmacopœia. The dose is from min. iv. to min. [illegible] in water.

[illegible] MURIAS, D. E. AMMONIÆ HYDROCHLORAS, L. *Muriate of ammonia. Hydrochlorate of ammonia. Chloride of ammonium. Sal ammoniac.*

This salt generally occurs in large crystalline cakes, convex on one side, concave on the other, of a grayish-white colour and translucent. It is tenacious, and difficult to reduce to powder. It has a pungent, acrid, bitter taste. Sp. gr., 1·45. It is composed of 1 eq. of chlorine, 2 of hydrogen, and 1 of nitrogen, its formula being NH^4, Cl. 2 H (Kane). It is permanent in the air; exposed to heat, it sublimes unchanged. It is soluble in 3·12 parts of water at 60°, and in its own weight of boiling water. It is also soluble in alcohol. During its solution in water a degree of cold is produced. This salt is best characterized by the evolution of gaseous ammonia, which takes place when it is rubbed in a mortar with quicklime.

It is one of the articles of the Materia Medica. It is procured by the manufacturers, chiefly, by decomposing the sulphate of ammonia which is formed in the purification of coal gas, or from the carbonate of ammonia obtained by the distillation of bones. In either case, the decomposing agent employed is common salt (chloride of sodium).

The hydrochlorate of ammonia is not employed in Great Britain as an internal remedy; but on the Continent, especially in Germany, it bears a high character as a stimulant expectorant, as soon as the acute inflammatory symptoms have subsided, in slighter cases of inflammations of the serous membranes, in milder forms of pneumonia, and of hoopingcough, in

[illegible] diarrhœa, a glance downward and you [illegible] dropsy. As a topical remedy this salt is [illegible] of as an application in [illegible] and, in [illegible] cold produced during its solution in water, as in [illegible] ...ering.

D. A. M. or Ammon.—Internally, gr. v. to [illegible] some aromatic powder, in the form of pills or bolus. [illegible] use, it may be dissolved in water or in vinegar, in the [illegible] of from ʒj. to ʒss. of the salt in a pint of liquid, to which [illegible] spirit is generally added. A refrigerative mixture may be [illegible] prepared by dissolving 5 parts each of this salt and of nitre in [illegible] of water, which will reduce the temperature forty degrees.

Incomp.—Sulphuric and nitric acids; potash; soda; lime; [illegible] magnesia.

If an overdose of this salt has been taken, vomiting [illegible] promoted by the use of tepid mucilaginous and [illegible]

Ammoniæ spiritus, D. L. E. *Spirit of ammonia.* [illegible] *carbonate of ammonia (of ammonia,* E.*) in rectified spirit.*

P. & C. P.—A transparent, colourless liquid, with a [illegible] ammoniacal odour, and an acrid taste. It is very [illegible] and acts as an alkali on vegetable colours. The Dublin and London preparations effervesce with the stronger acids. Sp. gr. [illegible] -845, E.

Fort.—Dub. "Rectified spirit, [illegible] fluid ounces; carbonate of ammonia, [illegible] powder, fifteen ounces; lime, recently burnt, three ounces. Add the carbonate of ammonia, in coarse powder, to the lime, previously slaked with [illegible] each fluid ounce; mix quickly, and [illegible] distil." Edin. "Take of [illegible] lime, recently burnt, [illegible] ounces; carbonate of ammonia, in coarse powder, [illegible] ounces; water [illegible] pints. Let the lime be slaked with the water in an iron or earthen vessel, and, when the vessel is cool, mix the lime and carbonate of ammonia quickly together, and introduce the mixture, while [illegible] a glass receiver, whose [illegible] tube which, passes easily to the bottom of a bottle containing [illegible] Apply heat to the mixture in a sand-bath gradually increased [illegible] the bottle cool. The bottle should be large enough to contain one [illegible] the solid ingredients."

Ten E.—Spirit of ammonia is a stimulant of [illegible] may be used as such in the same cases as the [illegible] the gas, or of the sesquicarbonate. It is generally [illegible] following forms: *Spiritus Ammoniæ aromaticus*, D. L. E. [illegible] of ammonia, *by measure*, ʒij.; essential oil of [illegible] ...negr, bruised, ʒss.; cinnamon, bruised, ʒij.; [illegible] ...vessel for 3 days, shaking occasionally; then [illegible] ...dochlorate of ammonia, ʒvi.; carbonate of potash, ʒvi.; [illegible] bruised, and cloves, bruised, of each, ʒij.; lemon [illegible] leaf spirit and water, of each, ℥iv.; mix, and distil [illegible] "Spirit of ammonia, ʒviij.; volatile oil of lemons, ℥ij.; [illegible] of rosemary, ʒss.; dissolve the oils in the spirit [illegible] An excellent and agreeable stimulant in fainting, [illegible] debility, and flatulent colic. Dose of the simple [illegible]

[illegible] ...ammoniæ, L.

[illegible]

F. & O. P.—The fresh [illegible]

Adeps suillus.—The oil of [illegible]

D. & M. ex Adip.—Of the [illegible]

Armoracia.—*Horseradish* [illegible]

[illegible] belonging to the natural family Compo[illegible] class and order *Syngenesia Superflua*. [illegible] about a foot high; stem hairy, simple, and single-flowered; leaves oval, entire; flowers golden-yellow. [illegible] The whole plant has a strong, peculiar odour, and [illegible] acrid, somewhat bitter taste. The flowers and [illegible] collected in July, and the roots in September. [illegible] we at present met with in the Dublin shops; they [illegible] a bitter, acrid principle (*cytisin*), yellow colouring [illegible] and some salts. Weber has also obtained from them [illegible] of a blue volatile oil. They yield their activity [illegible] water and to alcohol.

Arnica bears a high character on the Continent, particularly in Germany, as a stimulant in adynamic febrile affections, in rheumatism, in paralysis, in amaurosis, &c., but is but little ever used in Great Britain. I have seen a tincture of the flowers useful in nervous headache.

Dose, &c.—Of the powder of the root, gr. x., three or four times a day. The flowers are usually given in the form of infusion or tincture.—*Infusum Arnicæ*, Aust. (Arnica flowers, [illegible] water, f℥xij.; infuse till cold, and strain.) Dose, f℥ij. *Tinctura Arnicæ*, Pol. (Arnica flowers, ℥iss.; proof spirit, [illegible] digest for 7 days, express, and strain.) This tincture may be prepared by percolation, having previously macerated the flowers with a little of the spirit for 24 hours. Dose, f℥ss.

[illegible] Tolutanum.—*Balsam of Tolu* (described in the [illegible] *Materia Medica*) is an excellent stimulant in alopecia or baldness, when applied in the form of pommade, as follows: Prepared lard, ℥ij.; white wax, ℥iij.; melt together; remove from the fire when they are beginning to thicken, add, with constant stirring, balsam of Tolu, f℥ij.; and oil of bergamot, min. xx.

[illegible] L. E. Melaleuca leucadendron, oleum volatile. *Obtained from the leaves of Melaleuca minor, Melaleuca leucadendron*, D.—The tree, to which this oil is variously referred by the London and Edinburgh Colleges, is a native of the Moluccas Islands; it belongs to the natural family Myrtaceæ, and to the Linnean class and order *Polyadelphia Icosandria*.

[illegible] about 30 feet high, crooked, with scattered branches; leaves [illegible] 1 to 5 inches long; flowers white, in short terminal spikes. [illegible] The volatile oil is procured from the leaves by distillation, [illegible] gathered in the end of September, macerated for 24 hours with water, [illegible] in a copper still with sufficient water. The oil comes over with the [illegible] water, and floats on the surface.

P. & C. P.—Cajeput oil is [illegible], very mobile, [illegible] of a fine green colour. It has a strong aromatic odour, resembling a mixture of camphor, rosemary, and peppermint; its taste is warm and aromatic, leaving a sensation of coolness [illegible] its specific gravity is about 0·925. It boils at 315°, and may be distilled entirely over by a heat of 212°. The composition of this oil is $C^{10}H^{9}O$; it is soluble in alcohol.

Adulterations.—In consequence of its high price, it is frequently adulterated; it is said that the chemists regard it as the former. Like all oils, it was often contaminated with oil of rosemary, [illegible] and sometimes with camphor and cardamom seeds. The [illegible] was a difficult one to detect, but at present it is met with in a very impure state. As imported, it sometimes contains copper, which may be recognised by its affording a reddish precipitate when agitated with a solution of ferrocyanide of potassium.

Th. E.—Cajeput oil is a powerful diffusible stimulant, [illegible] not much used. When the Asiatic cholera first appeared, it was highly extolled as a remedy for that disease, but it did not [illegible] its reputation long. It is much employed on the Continent in chronic rheumatism, gout, hysteria, and other nervous affections. Dose, min. v. to min. x., rubbed up with sugar.

CALAMUS AROMATICUS, E. ACORUS, L. *Sweet Flag. Rhizoma of Acorus calamus.*—Indigenous, belonging to the natural family *Aroideæ*, and to the Linnæan class and order *Hexandria Monogynia*.

[illegible] creeping, with many long roots; leaves 2 to 3 feet long, [illegible] green; flowers pale green, arranged [illegible]

P. & C. P.—The rhizome or rootstalk, as the drug stands, is met with in the shops in flattened pieces from 2 to 3 inches long, half an inch broad, with a corrugated, yellowish-brown, [illegible] skin; internally it is spongy, with a pinkish-yellow tint. It has an aromatic odour, and a pungent, bitter taste. Sweet flag is composed of soft resin, extractive, gum, mucilage, a trace of [illegible] some salts, and woody fibre. It yields its properties to [illegible] to water.

Th. E.—An aromatic stimulant, scarcely ever employed [illegible] may be used as an adjunct to tonics in debility of the digestive organs. Dose, in powder, gr. xx. to 3i.; as infusion (1 to 20), 3ss. to 3j. Sprinkling 3i. of the bruised rhizome in 1½ pt. of boiling water for an hour), fʒj. to fʒij.

CALX CHLORATA, L. E. *Chloride of lime. Chloruret of lime. Hypochlorite of lime. Bleaching Powder.*

P. P.—As commonly met with, this is a white [illegible] powder, with a faint odour of chlorine, and [illegible] partly [illegible]

E. P.—Dry [illegible] of lime is a mixture which [illegible] chlorine; it is usually [illegible] of lime and [illegible] to the [illegible] of [illegible]

...ounces of water. Solutions of this substance should be made...filtered, to remove the insoluble hydrate of lime. Water is used...to dissolve the alkaloids readily in their ordinary salts; but...any weak acid may be added to the solution.

Incompat.—Sulphuric acid and its salts; the alkalies; salts of...with carbonates and oxalates.

Camphora. U. S. L. E. *Camphor. Camphor of Laurus Camphora*, and of *Dryobalanops Camphora*. D. *A peculiar concrete oil, obtained from Laurus Camphora*. L. *Camphora officinarum*. I.—The Edinburgh College has retained the barbarous nomenclature of Nees von Esenbeck, who first described the camphor-tree; it is a native of China and Japan, and belongs to the natural family *Lauraceæ*, and to the Linnæan class and order *Enneandria Monogynia*. The camphor obtained from the *Dryobalanops camphora* is not brought to Europe.

S. C.—A peculiar tree, with a camphor-like odour, is found in the...and on the coast of the...which are the only known places that supply...matter to the trade commonly, as which the Chinese could be brought, the...Japan, but in confidence in which allowed in the empire. In this country...imported into Europe, when it is supposed to have undergone...have never been traced with the certainty necessary to...

P. P.—Refined camphor is met with in hemispherical...perforated in the centre; it is white, translucent, tough,...with a crystalline fracture; semivolatile, unctuous, and...with great difficulty, unless with the aid of a little...It is lighter than water, its density being 0·9887. It has a...aromatic smell, and a bitter, cooling taste.

C. P.—Camphor is a species of solid volatile oil; it is composed of 1 eq. of camphogen ($C^{20}H^{16}$) and 2 eq. of water ($2HO$). It...ordinary temperature of the air, at 175°, fuses at 347°, and boils at 399°, requires 1000 parts of water for its solution, to which it imparts both odour and taste, but it may be suspended in quantity in water by means of mucilage, yolk of egg, &c. It is very soluble in alcohol, ether, and the fixed and volatile oils. The solution in alcohol is precipitated by water. Water...an eighth of its weight of camphor, which it retains in...parts of water.

L. E.—Much difference of opinion exists as to the source of camphor in the animal economy, but the most striking and...effect which it has is that of a powerful...drug; and this is borne out by the symptoms which...a dose taken to an excess. In the practice of...by a good writer of the day, in...camphor is chiefly used, and values as to its effects,...the principal medicine on which it...

camphor in the spirit; afterward add the soap and [illegible] with a gentle heat till it is dissolved. L.E." D. L. "Camphor, [illegible] camphor, [illegible] of rosemary, five; rectified spirit [illegible]; digest the soap in the spirit for 3 days; add the camphor and [illegible] agitate briskly." L.) *Soap Liniment; Opodeldoc.* A [illegible] cleansing liniment.

[U. S. P.—*Aqua Camphoræ.* Camphor, 2 drachms; [illegible] 40 minims; carbonate of magnesia, 1 drachm; distilled water, 2 pints. Rub the camphor first with the alcohol, then water with carbonate of magnesia, and, lastly, with the water gradually added and filter through a paper.]

Liniment.—The following observations of M. Piorry should be borne in mind in prescribing camphor: with *benzoin*, balsam of Tolu, turpentine, and mastich, it forms a soft mass which does not retain the pilular form; camphor is completely deprived of odour by being mixed with assafœtida, galbanum, asagreum, and balsam of Tolu, and the odour is very much weakened by [illegible] mastich, ammoniac, opoponax, benzoin, and resin of guaiacum.

Cayenne.—*Cayenne Pepper* (described in the division *Excitants*) is not much employed in medicine internally; it is a good stimulant in those forms of dyspepsia which depend on relaxation and languid digestion, and in the collapse of cholera and of typhus. As a topical remedy, it is used with much benefit as an [illegible] stimulating gargles in cynanche maligna, and in all cases of [illegible] sore throat. For this purpose, the tincture, or *Cola* [illegible] generally employed. The dose of powdered capsicum is from [illegible] to gr. viij, made into pill with crumb of bread.—*Tincture of Capsicum*, D. L. E. (Capsicum (bruised, L. E.), 3ss. (ʒvi., L. E.); [illegible] spirit, Oij. (Oiij., L. E.); macerate (digest, E.) for 14 (7, L.) days and filter, squeezing the residuum. This tincture is best prepared by percolation, which may be commenced so soon as the capsicum is made into a pulp with a little spirit.' E.) Dose, [illegible] xx. to ℥j.; as an adjunct to gargles, ʒiv. to ℥j. to ℥viij. of an [illegible] vehicle.—*Cola Vinegar* (prepared by infusing [illegible] ounce pepper in Oij of white wine vinegar for 10 days and straining) is added to gargles, in the proportion of ℥j. to ℥viij. of [illegible] of roses.—*Cayenne Lozenges*, allowed to dissolve slowly in the mouth, are very useful in the hoarseness and relaxed sore throat of public speakers and singers.

Capsicum, L. Capsicum [illegible], Poiret, D. *Cayenne flower. The flowers of Cardamine Pratensis.*—[illegible] belongs to the natural family *Cruciferæ*, and to the [illegible] and order *Tetradynamia Siliculosa*.

The flowers of this plant are [illegible]-coloured; they [illegible] aromatic odour, and a pungent, bitter taste. They [illegible] on a trace of volatile oil, and some [illegible] [illegible] [illegible]

(genus D.) *of Ceylon Cinnamon.*—Inferior species, belonging to the family *Lauraceæ*, and to the Linnæan class and order *Enneandria Digynia*.

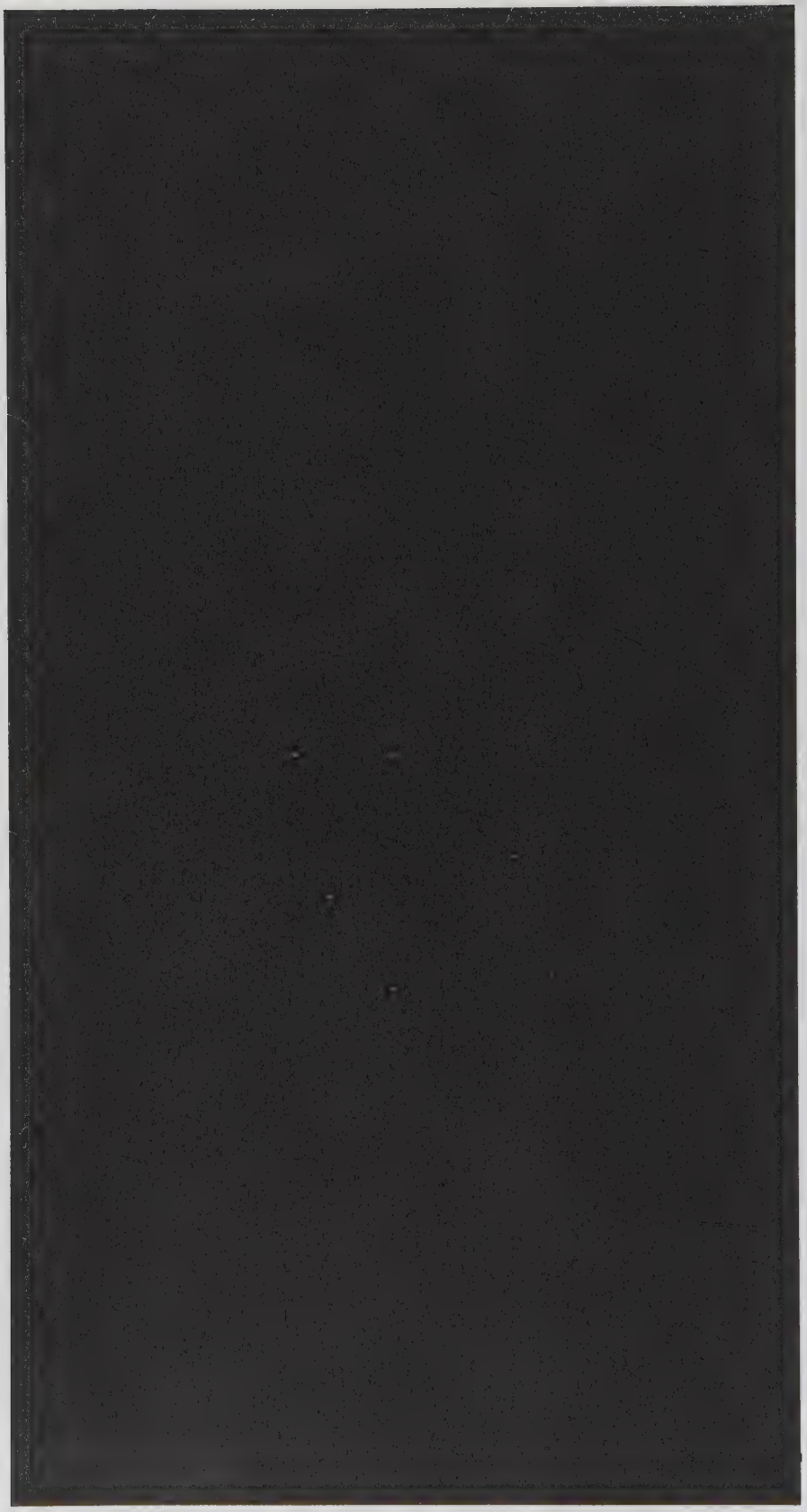
P. & C. P.—[illegible] pungent taste, [illegible] aromatic odour, [illegible] agreeable taste. It contains about 3½ per cent. of a light [illegible] oil, upon which its aromatic properties depend.

Ed. E.—Caraway is an agreeable, aromatic [illegible] employed by the cook and confectioner as a [illegible] agent. In medicine, it is used for giving warmth to other [illegible] stomach.

D. & M. on Ape.—*Of the seeds*, ℥ss to ℥j—*Oleum Carui*, Ed. E. (Prepared according to the general directions for [illegible] oils.) Frequently mixed to enhance pills and [illegible] Dose, min. j to min. x. This oil is often adulterated with oil of [illegible] turpentine, which may be detected by the odour when dropped [illegible] of spirits.—*Aqua Carui*, D. L. ("Caraway, bruised, Ibj; proud spirit, Oxij; water, enough to prevent empyreuma; distil a gallon." D. "Caraway, bruised, ℥xvj; proud spirit, Oxij; water, enough to prevent empyreuma; distil a gallon." L.) Used as an aromatic vehicle for other medicines, and as a carminative for children. Dose, ℥ij to ℥iv.—*Spiritus Carui*, L. E. ("Caraway, bruised, ℥ij; proud spirit, enough to prevent empyreuma; macerate for 24 hours, and distil a gallon." D. "Caraway, bruised, ℥viij; proud spirit, Oxij; water, Oij; mix, and with a slow fire distil a gallon." L. "Caraway, bruised, ℥ss.; proud spirit, Oviij; macerate for two days in a covered vessel, add Oss. of water, and distil off Oviij." E.) A grateful and stimulant. Dose, ℥ss to ℥iv.

CARYOPHYLLUS; CARYOPHYLLI GENUS. L. E. Essential character: [illegible] PLURES NONNUM EXISTENTES ET CALYCE SOLUTILES. L. *Clove and their volatile oil. Dried unblown flower-buds* [illegible] *and the volatile oil distilled from them* [illegible] L.) *of Caryophyllus aromaticus*, L. E.—*of Jamaica*, Cinnamon or D.—The same tree is indicated by all the colleges but the [illegible] has adopted the nomenclature of Thunberg. It is a native of the Moluccas islands, and grows freely in various parts of the East and West Indies. It belongs to the natural family *Myrtoidæ*, or to the Linnæan class and order *Polyandria Monogynia*.

P. & C. P.—Cloves are the unblown flower-buds [illegible] tubular calyx with the [illegible] corolla, [illegible] fall between the four teeth. They consist of [illegible] cracks, and [illegible] pungent, [illegible] taste. They contain [illegible] of 15 per cent. of volatile oil, [illegible] of an [illegible] [illegible] [illegible]



partially to water. The undeveloped flowers of *Chamomilla Cassia* are imported under the name of Cassia flowers (*Flores Cassiæ*). They have the same properties as the bark, but are rarely employed in medicine.

Tr. I.—Cassia and its preparations are principally employed on account of their application to cinnamon, for which, as being much cheaper, they are usually substituted; they are not, perhaps, quite so agreeable, and some have held them to be more astringent.

D. & M. or Aqua.—Of the bark, powdered, ℥ x. to ℥ss.—*Cassiæ Cortex*, E.; mihi ℥j. to mihi. v.—*Aqua Cassiæ*, E. (Cassia bruised, ℥xvj.; water, cong. ij.; rectified spirit, fʒvj.; mix, macerate, and distil off one gallon.) An aromatic water, to be used as a vehicle for more active medicines. Dose, ℥ij. to ℥iv.—*Species Cassiæ*, E. (Cassia bark, in coarse powder, ℥ij.; prepared as for spirit of cinnamon. Dose, 3ss. to 3ij.—*Tinctura Cassiæ*, E. (Cassia bark in coarse powder, ℥ij.; proof spirit, Oj.; digest for 7 days, strain, express the residuum strongly, and filter. This tincture is more conveniently made by percolation, the cassia being allowed to macerate for 12 hours in a little of the spirit before being put into the percolator.) Dose, fʒj. to fʒij.

Ingredients.—The essential oil of cassia, and gelatine.

Cepa. Allium cepa, Linnæus, D. *The Onion. Ord. Hexandria Digynia.*—A native of Egypt, belonging to the natural family Liliaceæ and to the Linnæan class and order *Hexandria Monogynia*.

Roasted onions were at one time employed in the form of poultice to stimulate indolent tumours, and to heal issues, and they are not rare in medicine in the present day.

Cerevisiæ fermentum, D. L. *Yeast. Barm.* A spontaneous product of *alcoholic fermentation* in various *liquids during the process of saccharine fermentation*.—Yeast is employed as a stimulant in the nervous disorders of typhoid fevers, and in the form of enema in typhus gangrene; it has been highly spoken of in cases where wine is indicated, but in consequence of inflammatory symptoms supervening, it cannot be given. Its principal use at present is for the preparation of a stimulating cataplasm for foul and irritable sores, the fetor of which it corrects, and, at the same time, promotes the separation of the sloughs.—*Cataplasma Fermenti*, D. L. (Yeast, fʒss. to fʒss., L.; wheaten flour, ℥ij. to ℥iv.; and equally a gentle heat until they begin to rise. The poultice should be renewed every six or eight hours; if it remains much longer, the quantity of flour ought to be increased. The dose of yeast in natural ale is two tablespoonfuls every three hours; it may be given with camphor mixture or with peppermint water.

Cinnamomi cortex, D. Cinnamon bark, L. Cinnamon. The inner bark of *Laurus Cinnamomum*, Linnæus. Class and order, *Enneandria Monogynia*. Nat. ord., *Laurineæ*, Juss.

[illegible]

P. P.—Cinnamon is imported from Ceylon in [illegible] ; some, also, is brought from Malabar. There are distinguished in commerce: the finest is in [illegible] ing of compound quills, the smaller being enclosed within the [illegible] from 30 to 40 inches in length; the pieces are very thin, rarely not more thicker than writing paper, of a light [illegible] yellow colour, smooth on the surface, with a splintery [illegible] The odour is aromatic and fragrant, and the taste [illegible] and feebly astringent. The inferior kinds are in [illegible] as much rolled, of a darker-brown colour, and with a [illegible] Its odour and taste. Oil of cinnamon is imported from [illegible] is of a pale wine-yellow colour, becoming darker by age, [illegible] possess chiefly the peculiar odour and taste of the bark [illegible] less than water, its density varying from 1·035 to 1·055 [illegible]

C. P.—Cinnamon bark consists of volatile oil, [illegible] mucilage, extractive, an acid, resin, colouring matter, and woody fibre. It yields its properties partially to water, but more completely to alcohol. The volatile oil sometimes amounts to about 6 parts in 100 of the fresh bark: it consists of a light and heavy oil, which may be obtained separate by distillation. The composition of the latter is $C_{10}H_{10}O$ (Mulder); by exposure to the air, it absorbs oxygen, and is converted into a mixture of cinnamic acid, resin, [illegible] and water. Strong nitric acid converts it into benzoic acid, and [illegible] into a solid crystalline mass.

Substitutes.—Cinnamon bark may be [illegible] by [illegible] real properties from cassia bark, which is often sold [illegible] oil may be distinguished from oil of cassia by its weaker odour, and by the taste of the latter being more acrid and [illegible] The tests of the Edinburgh Pharmacopœia for the genuine cinnamon apply equally to oil of cassia: "Cherry-red [illegible] with yellow when recent; odour purely cinnamonic; taste [illegible] converts it nearly into a uniform crystalline opake [illegible]

T. E.—Cinnamon is an excellent [illegible] and, in consequence of its agreeable flavour, is very much employed [illegible] more principally as an aromatic adjunct to other [illegible]

D. & M. or Ann.—In powder, [illegible] to 30 [illegible] ; [illegible] to [illegible] ; [illegible] Cinnamon, D. L. E. [illegible] tincture, [illegible] ; [illegible] ; [illegible] ;

ing to the natural family *Menispermaceæ*, and to the Linnæan class and order *Dioecia Monadelphia*.

E. C.—A great climbing shrub, [illegible] with [illegible] leaves, [illegible] and as many wood; [illegible] [illegible] stamens; ovaries 2 to 3, [illegible]

P. P.—The best commercial known under the name of Cocculus Indicus is roundish, about the size of a large pea, with a dark brown, wrinkled pericarp, within which is the kernel or nut; the kernel is white and oily, and does not [illegible] shell. It is void of odour, but has an intensely bitter [illegible]

C. P.—The nucleus contains a peculiar, white, crystalline principle, which has been named *Picrotoxin*, resin, gum, a fatty matter, and other unimportant substances. Picrotoxin is the active principle; it is soluble in 150 parts of temperate water, 25 of boiling water, 2 of pure ether, and 3 of alcohol; it is insoluble in the fixed and volatile oils, its composition is $C^{30}H^{16}O^{8}$. Cocculin has [illegible] its active properties to alcohol, and but very imperfectly to [illegible] cold or boiling water.

Adulterations.—As met with in commerce, either [illegible] have been gathered before it is quite ripe or from [illegible] the kernel often is completely dried up, so as to leave the [illegible] not quite empty. The *Edinburgh College* directs, however, that the kernels should fill at least two thirds of the [illegible]

Th. E.—Cocculus Indicus is a powerful stimulant, in large [illegible] producing death, with tetanic convulsions and [illegible] it is said to be [illegible] to poison fish; and in Great Britain is often [illegible] employed by brewers to give an artificial strength to [illegible] but since it is only employed externally to destroy vermin [illegible] stimulating application, in the form of ointment, to [illegible] eczema and porrigo of the scalp. Picrotoxin is [illegible] it may be used as a substitute for the drug.—*Dose* [illegible]

E. (Take any convenient quantity of Cocculus Indicus [illegible] and preserve the kernels; beat them well in a mortar, [illegible] and them with a little sweet; and then add sweet oil [illegible] altogether to five times the weight of the kernels.) [illegible] *Picrotoxin*, Laseg. (Picrotoxia, gr. s.; sweet, [illegible] sour.) Either of these ointments may be applied in [illegible] to the scalp night and morning in the cases above [illegible] and the head well cleansed with soap and water [illegible] once daily. They should be used with great caution [illegible] pain is not entire, as danger may arise from absorption.

Cocculus Indicus, L. E. Cocculus of Levant, D. [illegible] *dus*. *The fruit* (*nucl.* D.) *of Cocculus suberosus* [illegible] the South of Europe, scarcely [illegible] [illegible] and family *Dodecandria*, and to the Linnæan class and order *Dioecia Dodecandria*.

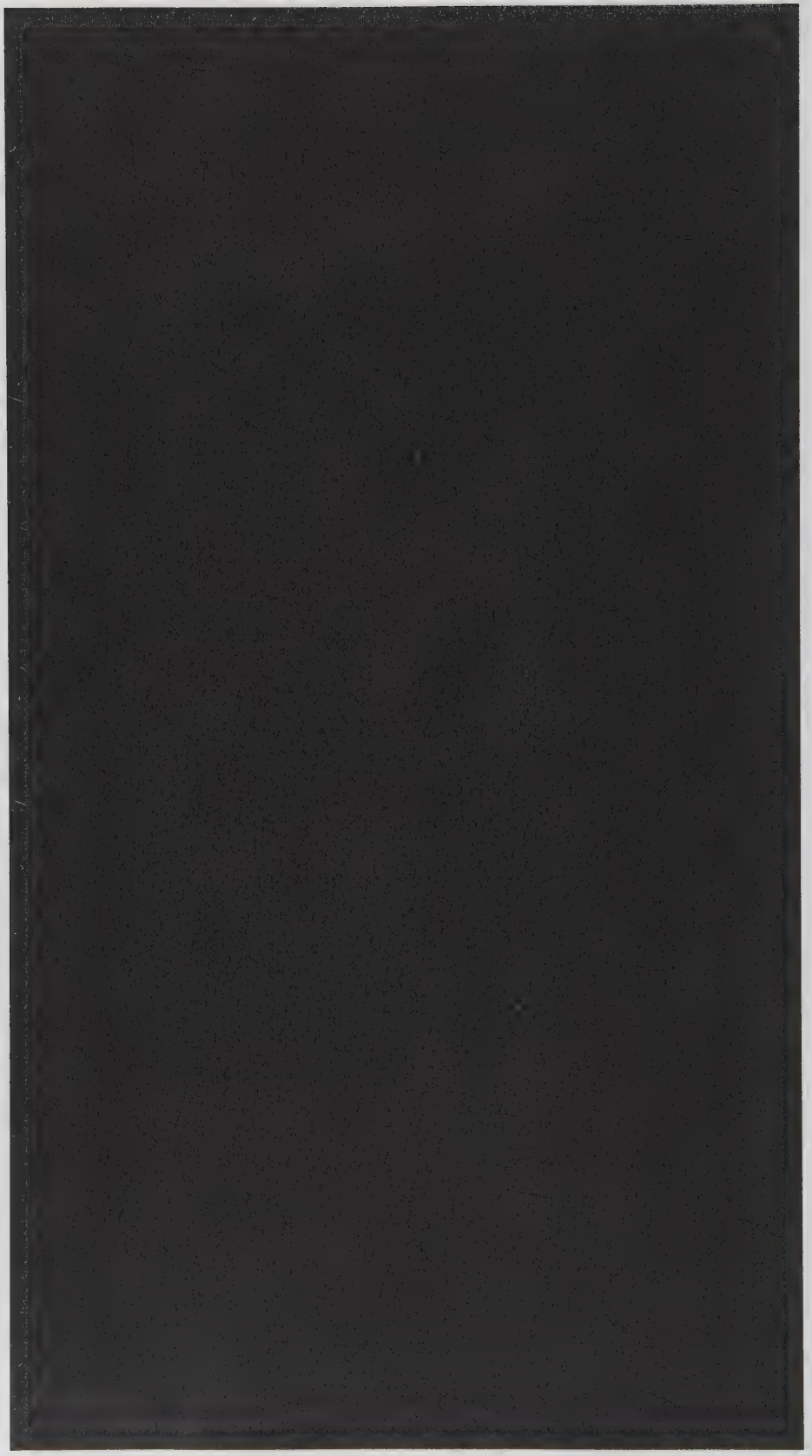
E. C.—[illegible]

P. P.—The best [illegible]

to Cary-pophyllus, and to the Laurus Cassia and [illegible] *Dryobalanops*.

These flowers were at one time supposed to possess [illegible] stimulant properties, and were employed in nervous and [illegible] diseases; but they are never used in the present day.

ELECTRICITY, GALVANISM, MAGNETO-ELECTRICITY.—These powerful agents in the treatment of [illegible] require some notice here. Their operation is [illegible] rules of a general character according to the manner in which they are applied. Thus their influence the vascular and nervous system [illegible] pulse is increased in frequency, the muscles stimulated to [illegible] tary action, and the general sensations [illegible]. The cases, in which their use is indicated are those of [illegible] they are employed with benefit in all forms of paralysis [illegible] nerves, both of sensation and of motion, when [illegible] any lesion of, or determination of blood to, the [illegible] tem; as in some forms of nervous deafness and of [illegible] cases of paraplegia and hemiplegia, in paralyses of [illegible] the forearm from the poison of lead or mercury, and in [illegible]. In suppression of the menstrual discharge arising [illegible] in the uterine organs, electrical shocks passed through [illegible] (from the sacrum to the pubis) are frequently profitably [illegible] herself. In the loss of muscular power attendant on [illegible] rheumatism and in chorea and other allied convulsive [illegible] employment of electricity also often proves serviceable. [illegible] foregoing cases the different forms of electricity are [illegible] applied, but *galvanic* and *magneto-electricity* possess the [illegible] vages of being more readily employed, as not being [illegible] by the state of the atmosphere, of the effects produced [illegible] under control, and of the facility with which they may [illegible] to the different parts of the body; consequently these [illegible] electricity are in the present day most generally used. [illegible] plication of common electricity, Leyden jar discharges, [illegible] ladrical or point conductors are used, and the mode of [illegible] of for discharging them, the patient may or may not [illegible] an insulating stool or chair, according to the effect which [illegible] ed to produce. Galvanic electricity is applied by means [illegible] pound galvanic troughs and insulated discharges. The [illegible] objectionable in consequence of its not being very [illegible] also from its requiring the use of acids to keep it [illegible]. Magneto electricity is the most convenient and [illegible] employing this agent in the practice of medicine, [illegible] applied by means of the electro-magnetic machines [illegible] of London, and from its not very frequently [illegible] ployed in the treatment of the diseases above [illegible]. [illegible] effects of any of the forms of electricity over [illegible] these pathological, and consequently in our [illegible] [illegible] [illegible]



Insula. Hindostan. — Inflorescence belonging to the natural family *Compositæ*, and to the Linnæan class and order *Syngenesia Polygamia Superflua*.

P. & C. P.—Decumpane root, when dried, has an aromatic odour, and a warm, bitter taste. It consists of native mucilage, starch, decumpane camphor (*Helenin*), a peculiar acid (*Inulin*), a fractal woody fibre, &c. It yields its active principles readily to water, but more completely to alcohol.

Th. E.—Decumpane is an aromatic stimulant pectoral, resembling in large doses. It is scarcely ever used in medicine, and may well be spared from the pharmacopœias. Dose, ½ to 1 dr.

Laurus nobilis, folia et baccæ, D. L. *Sweet bay leaves and berries. Leaves and berries of Laurus Nobilis.*—A native of the South of Europe, cultivated in our shrubberies; it belongs to the natural family *Laurineæ*, and to the Linnæan class and order *Enneandria Monogynia*.

B. C.—A small tree, having alternate, lanceolate, entire, petiolate, smooth, coriaceous, veiny leaves, and small, black, oval berry, containing a single oval seed.

P. & C. P.—The leaves and fruit have an aromatic odour, agreeable enough, and a warm, somewhat bitter taste. Their properties depend on a volatile oil, which may be obtained by distillation. The berries also contain about 12 per cent. of a fatty concrete oil, which has been recently imported from Egypt.

Th. E.—The leaves, berries, and oils of the sweet bay are aromatic stimulants but are scarcely ever employed in medicine. The leaves and berries may be administered in the form of infusion prepared by infusing 1 oz. of either, bruised, in 1 pint of boiling water. Dose, ½ to 1 fl. oz.

Lavandula, L. E. Lavandulæ spica, flores, D. *Lavender flowers. Flowers of Lavandula Spica*, D. L.—*Lavandula vera*, L. E. from *L. vera* (De Candolle) that the flowers are purple and not blue; this is a native of the central parts of Europe, and is cultivated in our gardens; it belongs to the natural family *Labiatæ*, and to the Linnæan class and order *Didynamia Gymnospermia*.

L. C.—Stem shrubby, 1 to 2 feet high; leaves alternate, linear, entire, sessile, pointed, and, as usually dried, 1 to 1½ inches long; flowers in a spike terminating the branches, blue, and the upper lip of the corolla two-lobed.

P. & C. P.—The flowers are gathered when in full bloom, and dried in the shade; they have a peculiar, fragrant odour, and warm, somewhat bitter, aromatic taste. They contain a blue tincture, bitter extractive, and woody fibre. The oil (Oleum Spicæ, D. L. E.), obtained by the usual process of distillation, is of a pale yellow colour, has the peculiar odour of the flowers and a warm, aromatic taste.

[illegible] preparations are much employed [illegible] to other medicines. [illegible] The flowers, in powder, are added to [illegible] of their agreeable odour.—*Oleum Lavandulæ*, [illegible], min. ij. to min. v.—*Spiritus Lavandulæ*, D. L. E. [illegible], ℥ij. (℥iiss., L. E.); proof (rectified, L. E.) spirit, [illegible] water, sufficient to prevent empyreuma, D.; Oj., L.); [illegible] 24 hours, and distil with a medium heat to [illegible], by [illegible] Mix, and with a slow fire distil a gallon," L. "Mix, [illegible] heat of a vapour-bath distil over Ovij," E.) Used [illegible] tion of the following: *Spiritus* (*Tinctura*, L.) *Lavandulæ*, Spirit of lavender, *by measure*, ℥iij. (Olss., L.; Oj., [illegible] *Rosmarini*, *by measure*, ℥j. (Oss., L.; fʒxij., E.); [illegible] gss. (℥iiss., L.); cinnamon, bruised (in coarse [illegible] (℥iiss., L.; ʒj., E.); (cloves, bruised, ℥ss., D. E.); [illegible] shavings, ʒi. (℥v., L.; ʒiij., E.); macerate (digest, D.) [illegible], L.; ℥j. E.) days, and strain; "strain through calico," [illegible] preparation, generally known as *Lavender Drops*, is used [illegible] and stomachic to relieve nausea, flatulence, lowness of [illegible] Dose, min. xxx. to ʒij. in water, or dropped on white [illegible]

CORTEX ET OLEUM, L. E. CITRUS MEDICA, TUNICA EXTERIOR ET OLEUM VOLATILE, D. *The external rind of the fruit, and the oil obtained from the rind, of Citrus Limonum*, L. *Citrus Medica*, D. *Lemon peel, and oil of lemons.*—The fruit has been described in the division *Refrigerants*. *Oil of lemons* is obtained from the rind either by distillation or expression; [illegible] the method usually followed; it is imported from Portugal, Italy, France. It has a pale greenish-yellow colour, the odour of lemons, and a pungent, aromatic taste; density, [illegible] composition is $C^{10}H^8$. *Lemon peel* is of a yellow colour, [illegible] agreeable, aromatic odour, and a warm, somewhat bitter taste, [illegible] of which are much injured by drying. Care should be taken in peeling lemons to remove only the outer yellow rind; [illegible] dried without artificial heat, and is best preserved in [illegible] bottles, in alternate layers, with sugar. Lemon peel [illegible] properties to both alcohol and water.

Oil of lemons is an aromatic stimulant; it is only used [illegible] to give an agreeable flavour to other medicines; as a [illegible] body, it is highly praised by the Germans as a stimulant [illegible] in bad scrofulous ophthalmia, for which purpose it is [illegible] the eye. Lemon peel is employed as a flavouring [illegible] confections. The dose of oil of lemons is from min. j. to [illegible]

[illegible] L. E. *Mastich. The resin* (*Concrete exudation*

...ovulation. Ex. of *Pinaceæ Laricineæ*.—A native of the Alps, a Europe and of the Levant, belonging to the natural order *Pinaceæ*, and to the Linnæan class and order *Diœcia Polyandria*.

Western conifers have leaves ranging from the form of pine to that of ...rregular, yellowish cones, which have a hard, persistent axis, and ...a woody habit. It is generally even used as ground, but ...ions have rarely employed as an ingredient in dietetic pulps. ...ing into the composition of the *Tinctura Aromatica* comp. L. ... page 285.)

MELISSA, L. MELISSA OFFICINALIS, HERBA, D. ... *Balm Herb of Melissa officinalis*.—A native of ... cultivated in our gardens; it belongs to the natural order ... to the Linnæan class and order *Didynamia Gymnospermia*.

B. C.—Balm-mint. Leaves broadly ovate, crenate, with short ... flowers white, in one-sided, axillary whorls, downy pedicels.

P. & C. P.—In the recent state, the whole herb has an ... citron-like odour, much of which is lost by drying. ... warm and bitter. It contains volatile oil, some tannin, ... traces of resins, gum, &c. It yields its properties to ... by infusion.

TH. E.—Balm is a mild aromatic or cordial, ... used except as a domestic remedy. *Infusum Melissæ*, L. ... (prepared by infusing ℥ij of the fresh herb in ... for a quarter of an hour) is given in doses ... from ℥ij to ℥iv.

MENTHA PIPERITA, HERBA, D. L. E. *Peppermint. Herb of the pipermint*.—Indigenous, belonging to the natural order ... and to the Linnæan class and order *Didynamia Gymnospermia*.

B. C.—Root creeping, stem smooth, purplish, leaves ovate, ... strongly serrated, acute, slightly hairy; flowers violet-coloured, in the ... spiral spikes; stamens and style ...

P. & C. P.—Peppermint has a powerful, aromatic, ... agreeable odour, and a warm, pungent taste, ... lar impression of coldness on the mouth, which ... during inspiration. These properties are due to a ... of volatile oil, which exists in small vesicles on ... leaves. This oil, *Olcum Menthæ Piperitæ*, D. L. E., ... the usual process of distillation; the quantity ... a 200th to a 320th; it is limpid and colourless, ... ish tint from age, with the odour ... degree. It is soluble in alcohol, and agitated with ... it acts intensely and tastes. Its density is ... and its composition ... $C^{10}H^{10}O^{2}$ (Kane).

TH. E.—Peppermint is perhaps the most powerful ... the genus of the Labiate plants, and, in ... of its odour and taste, is very generally ... It is also much employed to relieve ... flatulency, and flatulent colic.

D. & M. OF ARM.—Of the ...

[illegible] — *Aqua Menthæ piperitæ*, D. L. E. ("Herb of peppermint, [illegible] water, sufficient to prevent empyreuma, distil a gallon." D. "Peppermint, dried, ℔j. (or oil of peppermint, ʒj.); [illegible] water, cong. ij.; distil a gallon." L. "Peppermint, fresh, a pound (℔j. if dry); water, cong. ij.; rectified spirit, [illegible] oz.; and distil one gallon." E.) Employed to relieve flatulency, but chiefly as a vehicle for other medicines. Dose, fʒij. to fʒij.—*Spiritus Menthæ piperitæ*, D. L. *Sp. Menthæ*, E. ("Oil of peppermint, by weight, one (Aij.—L.); rectified (proof, L.) spirit, [illegible] gallon; water, sufficient to prevent empyreuma (Oj.—L.); mix, and with a slow fire distil a gallon." D. L. "Fresh peppermint, [illegible] pounds; proceed as for spirit of caraway." E.) Stimulant and carminative. Dose, fʒss. to fʒi.—*Essence of peppermint* of the shops is prepared by dissolving fʒi. of the oil in ℔j. of rectified spirit; the dose is from gtt. xx. to gtt. xxx. or more.

MENTHA PULEGIUM, HERBA, D. L. PULEGIUM, E. *Pennyroyal. Herb of Mentha Pulegium.*—Indigenous, belonging to the natural family *Labiatæ*, and to the Linnæan class and order *Didynamia Gymnospermia*.

[illegible] has a peculiar odour, and small hypocrateriform leaves, both of which are thickly covered with short hairs.

T. & C. P.—Pennyroyal has a strong, peculiar, aromatic odour, and a pungent, somewhat bitter, cooling taste; it contains a volatile oil, on which its properties depend, and which is obtained by the usual process of distillation; it is of a pale greenish-yellow colour, with the odour and taste of the plant. Its density is 0·925. and its composition $C^{10}H^{9}O$ (Kane).

Ph. V.—Pennyroyal is identical in action with peppermint, but, as its odour and taste are not so agreeable, it is much less used.

U. S. M. *et* Ann.—*Oleum Menthæ Pulegii*, D. L. E.—*Spiritus Menthæ Pulegii*, L.—*Aqua Menthæ Pulegii*, D. L. E.—*Essence of pennyroyal* of the shops, are all prepared with pennyroyal in the same manner as the corresponding preparations of peppermint. The doses, also, are the same.

MENTHA VIRIDIS, HERBA, D. L. E. *Spearmint. Herb of Mentha viridis.*—Indigenous, belonging to the natural family *Labiatæ*, and to the Linnæan class and order *Didynamia Gymnospermia*.

[illegible] leaves lanceolate, acute, glabrous, sessile; spikes interrupted, cylindrical; [illegible] serrulate, somewhat hairy, as well as the calyx.

P. & C. P.—Spearmint has a strong, peculiar, in many persons agreeable odour, and a warm, bitter taste, followed by a sense of coolness when air is drawn into the mouth; much of these properties is lost by drying. They depend on a volatile oil, of which the fresh leaf contains only a small part. This oil is of a light-yellow colour, acquiring a reddish-brown tint by age; it possesses nearly the odour and taste of the plant. Its density is 0·914, and its composition $C^{10}H^{9}O$ (Kane).

Ph. L.—Spearmint resembles in its action peppermint, but is

[illegible] Myristica moschata. D. L. E. Myristica [illegible] L. E. Myristica [illegible] L. E. Myristica moschata, nucibus [illegible] E. Nutmeg. *Kernel of the fruit* [illegible] D. L. E. *Inspissated oil of the* [illegible] D. *And coarse expressed oil of nutmegs, from the ker* *fruit.* E.—*of Myristica moschata.* D. L.—*of Myristica* [illegible] E.—A native of the Molucca Islands, belonging to the na[illegible] ily *Myristicæa* and to the Linnæan class and order *Di* *nadelphia.*

P. & C.—A tree, 20 to 30 feet high, leaves [illegible] entire, [illegible] [illegible] [illegible]

...ble in alcohol, yellow fat oil insoluble in alcohol, an acrid resinoid, amylin, ligneo, &c. Nutmegs and mace yield their aroma and taste to boiling water; but they yield their properties more completely to alcohol.

Medical uses.—Nutmegs from which the volatile oil has been...ed are sometimes mixed with good nutmegs, the holes which have been in them being stopped up with powdered ...; this fraud is seldom attempted in the present day; it may be detected by the lightness of the nutmeg. Those nutmegs which are small, sharp, heavy, and not wormeaten, should be chosen.

Ther. Eff.—Nutmegs are agreeable, aromatic stimulants, chiefly ...ing to the volatile ingredients. Taken in large quantity, they ...ce narcotic, and, consequently, their use should be avoided by ...ons who have an apoplectic or paralytic tendency. The fixed ...l has been employed externally as a stimulant in chronic rheumatism and paralysis. Mace is not used in medicine; its properties ...e similar to those of nutmegs.

Off. Prep. M. et Amygd.—In substance, gr. x. to gr. xxx.—*Oleum Myristicæ*, D. L. E. Min. j. to min. v., dropped on sugar.—*Spiritus Myristicæ*, D. *Sp. Myristicæ*, L. E. (Nutmegs, bruised, ℥ss.; proof spirit, cong. j.; water, sufficient to prevent empyreuma (D.), L. E.); mix (macerate for 24 hours, D.), and ...ce slow fire, L.) distil a gallon.) Stimulant and aromatic in ...ion, in cathartic mixtures, to prevent griping. It may be ...ed extemporaneously by dissolving from 3x. of the volatile ...l in ℥j. of proof spirit. Dose, ℥ss. to ℥ss.

CURCUMA, D. L. *Generic char. of Curcuma Zerumbet.*—A bulbous root, a native of Coromandel and other parts of the East Indies, belonging to the natural family *Amomeæ*, and to the Linnæan class and order *Decandria Monogynia*.

Officinal. It is met with in the form of irregularly-rounded, whitish or grayish root-stems, powdery on the surface; they have a fragrant odour, and an aromatic somewhat bitter taste. They consist principally of volatile oil and resin, and are insoluble in water, but soluble in alcohol. This substance is the true *Terra Merita* of the Hindoos; it possesses mildly stimulant properties, but in the present day is only employed as a fumigating agent. The dose for internal use would be from ℥ss. to ℥j. made into an emulsion with ...k of egg or with mucilage.

CHAMÆMELUM, L. E. CHAMÆMELUM VULGARE, HERBA ET FLORES, D. CHAMÆMELUM ROMANUM, HERBA, D. *Herb* (*Volatile oil*, D.) *of Origanum Majorana*, D. L. E. *Herb of Origanum Majorana*, D.—*O. vulgare*, ...ch Origanum, or Pyrum, is an indigenous plant, belonging to the natural family *Labiatæ*, and to the Linnæan class and order *Didynamia Gymnospermia*. *O. Majorana*, or sweet marjoram, is a native of Spain and of Asia, and is commonly cultivated in Britain ...ts gardens.

Off. Char. *O. vulgare* has a peculiar, aromatic odour, and

of the latter being much stronger, and a warm, pungent taste, the properties chiefly depend on volatile oil.—*Oleum Origani*, E. *Oil of Marjoram, Oil of Thyme*, is obtained from *Origanum vulgare* by the usual process of distillation. It is of a reddish colour, becoming darker by age, and has the odour and taste of the herb. Its density is 0·897, and its composition $C^{10}H^{16}O$. A large quantity of the plant yields, on an average, from 8 to 10 ounces of oil.

Ths. E.—The marjorams possess the aromatic, stimulant properties of the Labiate plants generally. In the present day they are but seldom used in medicine; the oil may be given in doses of 2 to 5 drops, dropped on sugar. It is sometimes employed to relieve the toothache, dropped on cotton and placed in the hollow of a carious tooth. Dissolved in olive oil, it is used as a stimulating embrocation.

Pimenta, D. L. E. *Pimento; Allspice; Jamaica pepper*, Ire. (*dried unripe berries*, L.) *of Myrtus Pimenta*, D. L. *Unripe berries of Eugenia Pimenta*, E.—A native of the West Indies, belonging to the natural family *Myrtaceæ*, and to the Linnæan class and order *Icosandria Monogynia*.

B. C.—A handsome tree, about 30 feet high, leaves oblong, pale on the under side, 4 inches long; flowers numerous, greenish yellow, in terminal branches of panicles; berry roundish, dark purple when ripe, 3-seeded.

P. & C. P.—Pimento is in the form of round blackish berries, rough, umbilicated with the persistent teeth of the calyx. The odour resembles a mixture of cloves, cinnamon, and nutmegs, whence the name *allspice*; the taste is pungent and aromatic, like that of cloves. These properties depend principally on volatile oil, of which Bonastre obtained 10 per cent. from the husk, and only 1 per cent. from the kernel. This oil, *Oleum Pimentæ*, D. L. E., is obtained from the berries by the usual process of distillation; it is of a yellowish colour when first drawn, but soon acquires a reddish tint; it has the peculiar odour of allspice, and a burning aromatic taste. Oil of allspice of commerce is heavier than water, its density being about 1·020. It is a mixture of a heavy and light oil, which may be obtained separately by distillation with solution of potash, as the former forms crystalline compounds with the alkalies. Pimento communicates both odour and taste to boiling water, but it yields its properties more completely to alcohol.

Ths. E.—Pimento is an aromatic stimulant, not much employed in medicine. Its preparations are chiefly used to communicate warmth and flavour to other substances.

D. & M. or Ann.—In substance, from ɔss. to ʒj.—*Oleum Pimentæ*, D. L. E., min. ij. to min. v.—*Spiritus Pimentæ*, D. L. E. (Pimento, bruised, ʒiij. (ʒiss., L.; ℥ss., E.); proceed as for spirit of nutmeg, D. L.; as for spirit of caraway, E.) Dose, ʒj to ʒij.—*Aqua Pimentæ*, D. L. E. ("Pimento, bruised, ℥ss., water sufficient to prevent empyreuma; macerate for 24 hours and draw a gallon." D. "Pimento, bruised, ℔i. (or oil of pimento, ʒj., Lii

[illegible] rectified, ℥j; spirit, ℥vij; [illegible], ℥ij; water, enough to [illegible] add [illegible] a gallon." L. E.) Carminative and stomachic; used in the flatulent colic of children, and as a vehicle for other medicines. Dose, ℈ss to ʒj.

Piper longum. D. L. E. *Long pepper. Dried spike (dried unripe fruit,* L.; *seeds,* D.) *of Piper Longum.*—A native of India, belonging to the natural family *Piperaceæ*, and to the Linnæan class and order *Diandria Trigynia.*

E. C.—[illegible]

T. & C. F.—Long pepper consists of the spadices, which are gathered before they are fully ripe, and dried in the sun. As met with in commerce, they are of a grayish colour, hard, about an inch and a half in length, cylindrical, striated diagonally on their surface. They have a somewhat aromatic odour, and a very pungent, spicy taste. The composition of long pepper is almost identical with that of black pepper. (See next article.)

T. E.—This pepper is somewhat more acrid than *Piper nigrum*, but is very frequently used in the same cases. Dose, gr. v. to ℈ss.

Piper nigrum. D. L. E. *Black pepper. Dried unripe berries* (*berries,* L.; *seeds,* D.) *of Piper Nigrum.*—A native of the mountains of India, cultivated in the East and West India Islands; it belongs to the natural family *Piperaceæ*, and to the Linnæan class and order *Didandria Trigynia.*

E. C.—[illegible]

T. & C. F.—Before the berries on each spike have all changed to red, they are collected and dried in the sun, to constitute black pepper. White pepper is procured by soaking the fully ripe seeds in water, so as to enable the outer husk to be afterward removed by rubbing. Black pepper consists of small spherical bodies, blackish and rough externally, whitish within, consisting of the outer wrinkled integument, surrounding the hard, smooth seed. It has a strong, peculiar, aromatic odour, and a very pungent, acrid taste.

C. F.—Black pepper is composed of a neutral crystalline principle, called but little known *Piperin*, of a very acrid, and resinous volatile oil, extractive, gum, [illegible], starch, malic and tartaric acids, &c. The active principles are the *piperin*, resin, and volatile oil. Piperin may be readily prepared by Pelletier's process, as follows: "Prepare an alcoholic extract of black pepper, digest it in a solution of caustic potash, and agitate with water; filter and wash carefully with water what remains on the filter; dissolve it in warm alcohol, and crystallize by cooling." As usually met with, piperin is a dark-yellow, resinous-looking substance, but it may be obtained in transparent, colourless, four-sided prisms; it is tasteless [illegible], is insoluble in cold water, dissolves sparingly in

boiling water or cold alcohol, but is very soluble in boiling alcohol; it melts at 212°: it is a neutral principle; its composition is $C^{34}H^{9}O^{4}N$. Black pepper imparts its properties partially to water, but more completely to alcohol.

Th. E.—Pepper is an acrid, aromatic stimulant, in general use as a spice. It also possesses remarkable febrifuge properties, which reside in the piperin. This substance has been employed with much success in the treatment of ague, and has succeeded in many instances in effecting a cure in cases where quina and other remedies have failed. An interesting account of the employment of piperin in the treatment of intermittent fevers in the Island of Trinidad, by Dr. Hartle, has been published in the 55th vol. of the Edinburgh Medical Journal. As a stimulant, black pepper will be found a useful addition to bitters in atony of the digestive organs: externally it is used in the form of ointment to cure the diseases of the scalp, and as an adjunct to rubefacient cataplasms.

P. & M. Ap.—In substance, gr. v. to gr. xx.—*Piperin* is given in doses of gr. j. to gr. v. every hour until gr. xvuj. have been taken. It may be made into pills with mucilage or conserve of roses.—Off. Prep. *Piperis Nigri*, D. L. E. Black pepper and [illegible] seeds, [illegible] dry ingredients [illegible] into a [illegible] whatever the [illegible] until [illegible] into a [illegible] the [illegible] *Words* [illegible] covering [illegible] bene- [illegible]— [illegible] black [illegible] time [illegible]—*Re-* [illegible] vinegar [illegible] of [illegible] A [illegible]

[illegible] ve of [illegible] family [illegible] *Mane-* *l.* [illegible] mixed in [illegible]

[illegible] Sul- [illegible]

[illegible] evolving the disagreeable odour of sulphuretted hydrogen when acidulated. It has an acrid, bitter, alkaline taste.

U. P.—It is a mixture of 2 eq. of hyposulphuret of potassium, and 1 of sulphate of potash ($2KS + KO,SO_3$). By exposure to the air it deliquesces, attracts oxygen, and is all converted into sulphate of potash, becoming white and inodorous. It is readily soluble in water; the solution is of a yellow colour, and highly alkaline.

[illegible]

Th. E.—In large doses, sulphuret of potassium acts as a powerful narcotico-acrid poison, a few drachms producing death, with convulsions and tetanic spasms. In small doses it operates as a general stimulant, and as such is employed on the Continent in the advanced stages of hemiplegia, in chronic rheumatism, in scrofulous skin diseases, &c.; but in Great Britain it is rarely used as an internal remedy. As a topical remedy, it is applied dissolved in water in the form of lotion or bath, or made into an ointment with axunge in chronic cutaneous diseases, principally those of a scaly character, and in the obstinate eruptions which affect the scalp.

D. & M. ad Ads.—For internal use, gr. ½ to gr. x., dissolved in some aromatic water and sweetened with syrup.—*Potassæ sulphuretæ aquæ*, D. (Washed sulphur, 1 part; water of caustic potash, 24 parts; boil for ten minutes and filter through paper; preserve the liquor in well closed vessels; its specific gravity = 1·117.) This preparation is similar to that formed by dissolving sulphuret of potash in water. Dose, min. x. to lx., diluted with water.—*Balneum Potassæ Sulphuretæ*, Edinb. (Sulphuret of potassium, ʒiv.; tepid water, cong. xxx.; dissolve in wooden vessels.) This may be employed as a local or general bath in skin diseases.—*Unguentum Potassæ Sulphuretæ*, Dublin. (Solution of sulphuret of potash, 12 parts; carbonate of potash, 8 parts; axunge, 80 parts; mix.) For scabies and other cutaneous diseases.

Incomp.—The acids and most metallic solutions.

In cases of poisoning with this substance, the best antidotes are solutions of chlorinated lime or chlorinated soda, with emollient drinks.

[illegible] L. E. Ranunculus sceleratus, Poisonous. D. Ranunculus. *The tops of Ranunculus sceleratus*.—A native of the marsh of Europe, belonging to the natural family *Ranunculaceæ*, and to the Linnæan class and order *Diandria Monogynia*.

[illegible]

P. & C. P.—The dried tops have an aromatic, agreeable odour, and a taste resembling peppermint, and a warm, pungent, bitter taste. These properties depend chiefly on volatile oil, of which a small [illegible] yields about one drachm. This oil, *Oleum*

Rosmarini D. L. E., is obtained by the usual process. [illegible] It is limpid and colourless, with the odour and taste [illegible] in an intense degree. Its density is 0·915, and its [illegible] (Dunn). Rosemary tops impregnate [illegible] to boiling water for more completely to [illegible]

Adulterations.—Oil of rosemary is often [illegible] turpentine; the fraud may be detected by the odour which [illegible] on heated spatula, or by its not being completely [illegible]

Th. E.—Rosemary possesses the aromatic, [illegible] of the Labiatæ plants before described, and may be [illegible] those purposes. The oil is frequently added to [illegible] perfumery, principally on account of its odour.

D. S. M. or Aqua.—*Oleum Rosmarini*, D. L. E., [illegible] dropped on sugar.—*Spiritus Rosmarini*, D. L. [illegible] rosemary tops, five pints; proof spirit, one gallon; [illegible] heat.' E. 'Oil of rosemary, fʒij; rectified spirit, [illegible] water, Oj; mix, and with a slow fire distil a gallon.' L. [illegible] rosemary, fʒij; proved fʒx; spirit of lavender,' L.) Strength [illegible] internally. Dose, m.x. x. to min. xx.

SAGE(S.A.).—*Cocculus* (described in the division [illegible] is a powerful narcotic, and as such is used in the form [illegible] as an external application in chronic rheumatism and paralysis, [illegible] over the region of the heart in hysterical and nervous palpitations. The powder of the seeds is employed to destroy pediculi, but its application is not unattended with danger, especially if the skin is broken. The active principle of cocculus, as before mentioned, is *menispermia*, and it was principally as a means of adulterating [illegible] that it was introduced into the London and Edinburgh Pharmacopœias. The following are the processes directed by the [illegible] lowed:

Unguentum.—*Lard*, 1 Cocculus, bruised, lbj.; powdered opium, lbss. [illegible] ointment, with addition of camomile, powder should be reserved and [illegible] a sufficiency; mix the ointment with a gallon of the spirit and as much [illegible] which it is directed to dissolve. Digest all for twelve hours, and express [illegible] powders remain in the strainer, and the spirit recovered by distillation. [illegible] have to be kept a third time. Press the cocculus, and let the ointment [illegible] solid and smooth ointment. *Preparation.*—Ointment of cocculus (prepared as [illegible] Dose of ointment, from a drachm to a scruple. [illegible] ointment, with addition of camomile, powder should be reserved and [illegible] a sufficiency; mix the ointment with a gallon of the spirit and as much [illegible] which it is directed to dissolve. Digest all for twelve hours, and express [illegible] powders remain in the strainer, and the spirit recovered by distillation. [illegible] have to be kept a third time. Press the cocculus, and let the ointment [illegible] solid and smooth ointment. *Preparation.*—Ointment of cocculus (prepared as [illegible] Dose of ointment, from a drachm to a scruple.

[illegible] and pour the residuum, while hot, into 12 ounces (by volume) of cold water. Filter through paper, and wash the residue on the filter as long as the washings precipitate with ammonia. Collect this precipitate on a filter, wash it slightly with cold water, and dry it, and by extraction with alcohol, evaporation of the alcoholic solution to dryness, and crystallization from hot alcohol, obtain it in pure crystals. Veratria thus obtained is not pure, but probably as the medical law. From this material veratrine is easy to obtained which has a considerable use, by solution in very weak alcohol, and precipitation with diluted chlorhydric acid, and precipitation with ammonia."

C. P.—Veratria is an uncrystallizable solid, pulverulent, as met with in commerce of a greyish-white colour, but it may be obtained perfectly white. It has an intensely acrid taste, and a solid to be sneezing but the smallest quantity applied to the lining membrane of the nostrils provokes violent sneezing.

C. P.—It is composed of $C^{32}H^{21}NO^{9}$. It is not volatile, nor altered by exposure to the air; it fuses at 230°, and cools into a translucent, yellowish mass. It is quite alkaline, is insoluble in cold water, requires 1000 parts of boiling water for its solution, is sparingly soluble in ether, but very soluble in alcohol. It forms salts with the acids, of which the muriate and the sulphate are also crystallizable.

Th. E.—In large doses, veratria operates as a powerful irritant poison, causing inflammation of the stomach and intestines when swallowed, and if applied to the surface of the body, producing acute irritation. Its action in small or medicinal doses does not appear to be well understood, but it would seem to act as a general stimulant, increased action of the intestines, the kidneys, and the capillaries of the skin often succeeding its administration. Its use in medicine has been hitherto confined to neuralgic diseases, for the treatment of which it was first introduced as an external application by Dr. Turnbull. But the experience of numerous physicians who have tried it on his recommendation not coinciding with the extravagant praises of the remedy, it has fallen into disrepute.

D. & M. or Ang.—*Pulvis Sabadillæ*, gr. j. to gr. v.—*Tinctura Sabadillæ*. (Cevadilla seeds, freed from their capsules, according to the directions of the *Edin. Phar.* for preparing veratria, and bruised, any quantity; rectified spirit as much as will cover them; macerate for ten days, express, and filter.) *For external use as an embrocation.*—*Extractum Sabadillæ*. (Evaporate the tincture with a gentle heat to a proper consistence.) Dose, gr. j. to gr. j. gradually increased. This extract may be advantageously substituted for veratria.—*Veratria*, L. E. Dose, gr. ¼, increased very cautiously. For an embrocation, ½ of the alkaloid may be dissolved in ℥j. of rectified spirit.—*Unguentum Veratriæ*, Turnbull. (Veratria, 3ss.; olive oil, ℥j.; prepared lard, ℥ss. mix.)—*Tinctura Veratriæ*, Maclagan. (Veratria, gr. xv.; rectified spirit, ℥x.) mix. Dose, min. v. to min. xv.

In poisoning with veratria, the treatment is the same as in poisoning with colchicum. (See page 98.)

Ex-cotyledonia seeds, pulv. D. *Effect.* Leaves of Scrophularia nodosa.—Indigenous, belonging to the natural family

[illegible]

SENEGA, L. F. *Angustifolia senega*, L. D. *Polygala senega*. *Root of Arcuated Snakeroot*.—A plant of North America, belonging to the natural family [illegible] and to the Linnæan class and order *Diœcia Hexandria*.

E. O.—[illegible]

P. P.—An imperial serpentaria root consists of a tuber [illegible] with numerous slender radicles of a yellowish brown colour externally, whitish within, with a short transverse fracture. [illegible] is aromatic, like that of valerian, and the taste warm and camphorous.

C. P.—It consists of volatile oil, with resin, bitter extractive, gum, ligneous fibre, starch, and some salts. It yields its properties to water and to alcohol.

TR. L.—Virginia snakeroot, although at one time [illegible] pain, is seldom employed in the present day. It appears to be [illegible] a general stimulant, and as such was used to [illegible] in [illegible] conjunctivitis, a gargarisma adstringens, in amaurosis [illegible] and [illegible] &c.

D. & M.—*Pulv. Arom.*—In powder, gr. x to [illegible].—*Infusum Serpentariæ*, L. F.—(Serpentaria, [illegible] bruised (bruised, L.) oz. ss; boiling (distilled, L.) water (a pint, L.) fʒ viij (viss, L.) for 4 hours in a (lightly L.) covered vessel, and strain.) Dose, fʒ ss to fʒ ij.—*Tinctura Serpentariæ*, D. L. F. (Serpentaria, bruised (not sliced, D.), [illegible] (Proof, L.) [illegible] (of [illegible], ℥ij (℥iij, L.); macerate for 7 (14, L.) days and strain, D. L. "Serpentaria, to render it fit for powder, [illegible] bruised, 3ss; proof spirit, ℥iij; proceed by percolation as directed in the Lecture of Cinchona." F.) Dose, [illegible].

SNAKEROOT, BLACK, L. *Solution of Citrate of Iron and Chloride of Soda*; *Hydrochlorate of Soda*; *Diaphoretic Syrup*.

P. P.—The solution is of a yellow colour, with a [illegible] of saltness, and a sharp, astringent taste.

C. P.—Its [illegible] composition has not been ascertained, but it is generally supposed to be a solution of [illegible] and [illegible] muriate of soda, and chloride of sodium. Prepared as the [illegible] runs, evaporate and [illegible] of the [illegible] to solid [illegible] dessicated. By evaporating with a gentle heat [illegible] are obtained in [illegible] called a [illegible] [illegible] [illegible]

[illegible]

To E.—This solution agrees precisely in its properties with hypochlorite of lime, and is employed for the same purposes. (See page 289.) For destroying noxious effluvia, it is to be preferred to that substance, as the salt, *chloride of sodium*, which is left does not decrepitate; while chloride of calcium is very deliquescent. The dose for external use is min. xx. to min. xxx. in a sufficiency of water, which may be sweetened with syrup.

[*Labarraque's solution of the chloride of sodium* is much employed in France, and has recently been introduced into American practice, in doses of 10 to 20 drops 3 times a day, as a remedy for [illegible], and with very encouraging results. It is prepared as follows. Take 2 parts of peroxyde of manganese, 8 parts of chlorhydric acid, 13 parts of chlorid of soda, and 60 parts of water. Dissolve the salt in the water, filter, and impregnate the solution with the chlorine gas.]

Sodæ murias D. E. Sodii chloretum, L. *Common salt. Chloride of sodium. Muriate of soda.* (*Impure commercial chloride of sodium*, E.)

P. P.—Chloride of sodium crystallizes in transparent, colourless cubes; it has an agreeable, saline taste, but no odour. Its density is 2.200.

C. P.—It is composed of 1 eq. of sodium, and 1 of chlorine (Na Cl). It contains no water of crystallization; but heated it decrepitates, owing to some being mechanically lodged between the cubes of the crystals. Exposed to a bright red heat, it fuses, and at a white heat volatilizes undecomposed. It is permanent in the air when quite pure; it is equally soluble in cold and boiling water, requiring 2.7 parts of water for its solution. It is insoluble in absolute alcohol, but rectified spirit dissolves it slightly. It is neutral to test paper.

[illegible]

[illegible] as given by the Edinburgh College, are as follows: "A solution is not precipitated by solution of carbonate of ammonia followed by solution of phosphate of soda. A solution of gr. iv. in distilled water is not entirely precipitated by a solution of gr. xxvij. of nitrate of silver."

Ust. Ext.—Chloride of sodium, taken internally in moderate quantity, acts as a mild stimulant to the digestive organs, promoting the assimilation of the foods on which account, as well as on account of its agreeable flavour, it is used generally by most if not all parts of the world as an adjunct to nearly every substance habitually used by man as an article of diet. It is also said to prove advantageous to the sedentary cynic, inasmuch as it prevents the generation of intestinal worms to which those who use little or no salt in their food are very subject. In somewhat larger doses it acts as a mild cathartic, forming a principal ingredient in many aperient waters in which it augments the operation of the other saline salts. It also proves emetic in doses of one or two ounces; and in such doses, a pound of it taken at once has occasionally been followed with all the symptoms of irritant poisoning. Applied to the surface of the body it acts as a local stimulant, producing a [illegible]. Chloride of sodium is not much employed in medicine; as an enema it may be administered in narcotic poisoning; in the absence of other substances; as a cathartic, it is not given alone but is frequently combined with the other saline cathartics (see page 1051); as an antihelmintic, a strong solution has been employed with the [illegible] to destroy ascarides; as a general stimulant it is used in some forms of dyspepsia, and in scrofulous and other glandular enlargements; and as a topical agent, it is added to [illegible] cold baths, when they are intended to act as local stimulants. In America, a saturated solution of common salt is employed with much success as a lotion in chronic granular ophthalmia. In this and some other diseases in which the saline constituents of the blood are deficient, a solution consisting of 3ij. of the chloride, and 3ij. of carbonate of soda dissolved in 3ix. of water, has been found very [illegible], but the results were not more successful than those which followed other methods of treatment.

D. & M. of Ars.—As a stimulant, gr. x. to 3i. As an escharotic, gr. xx. to 3j. dissolved in 3j. of water. For baths, 3j. to 3ij. may be added to from 5ong. iij. to 5ong. v. of other cold or warm water.

Incomp.—Nitrate of silver.

Stercoracea. L. E. Dermatine Stercoracea. [illegible]. Stercora. *Seeds of Dolichichos Soja* [illegible]. A native of the South of Europe, belonging to the natural family [illegible] and to the Linnæan class and order *Polyadelphia Diagynia*.

[illegible]

P. & U. P.—Stercoracea [illegible]

present day, however, it is only used as a local stimulant in cutaneous diseases, especially those which affect the scalp.

Picis liquidæ, D. (Tar, *by measure*, ℥ij ; water, ℥xxxij ; *stirring with a stick for a quarter of an hour; as soon as* [illegible] *subsided, strain the liquor, and keep it in well-closed* [illegible]. *Tar water was first introduced by Bishop Berkley, as a* [illegible] *for diseases of the chest and of the kidneys; the dose was* [illegible] *to* ℥ij, *daily.*—*Unguentum picis liquidæ*, D. L. E. (Tar [illegible] *wax, of each, two* ℥ij. L.; *melt them together, and* [illegible] *through a sieve,*" D.; "*press through a linen cloth*" L. [illegible] *bees' wax,* ℥ij ; *melt the wax with a gentle heat, add* [illegible] *and stir the mixture briskly, as it commences to cool.*" E.) [illegible] *is often used with much benefit as a stimulant in* [illegible] *of the scalp in children.*

[illegible]. L. Pix arida, E. *The prepared solid resin of Pinus* [illegible]. L. *Pitch from various species of Pinus and Abies.* [illegible] *is a black, solid matter left after the oil, the acid and* [illegible] *expelled by heat from tar. It is only used externally,* [illegible] *being employed for the same purposes as tar ointment.*—*Unguentum picis nigræ*, L. (Black pitch, wax, and resin, ℥ij ; olive oil, ℥xvj ; *melt them together, and press through a cloth.*)

Burgundica, D. E. Pix abietina, L. *The (prepared*, L.) *of Pinus Abies*, D. L. *Concrete resinous exudation, probably not necessarily from Abies excelsa*, E. *Burgundy Pitch.*—This [illegible] *is supposed by the London and Dublin Colleges to be* [illegible] *by fusion and expression from common frankincense.* D. (*Thuris Resina*, L.), *but as met with in the shops it is a mixture of common turpentine, resin, and palm oil. It is* [illegible] *of a pale yellow colour, with a greenish-brown colour* [illegible]. *It is only used externally, as a topical stimulant.*—*Emplastrum picis*, L. E. ("Burgundy pitch, ℥ij ; resin of the spruce [illegible], resin and wax, of each, ℥v. ; expressed oil of nutmegs, ℥j ; oil and water, of each, f℥ij. ; add first the resin of the spruce to the oil of nutmegs, the olive oil, and the water, to the pitch, and wax melted together. Lastly, mix them all, and boil to a proper consistence." L. "*Burgundy pitch, ℥ij. ; resin and wax, of each, ℥j ; oil of mace, ℥ss ; olive oil, ℥j ; wa*[illegible] *liquefy the pitch, resin, and wax with a gentle heat, add the* [illegible], *mix them well together, and boil all the mixture to the proper consistence.*" E. A stimulating plaster, applied [illegible] *in chronic catarrhal complaints, and over the seat of* [illegible] *in local neuralgia and in chronic rheumatism.*

[illegible]. *White Hellebore* (described in the division [illegible]) *is a powerful stimulant, causing irritation, and even in-*[illegible] *of the stomach, when taken in not very large doses. It* [illegible] *has been used in nervous affections, and in dropsies* [illegible] *externally and internally; its employment* [illegible], *and its application for the*

…ulcerations from mercury, …ally when it is caused by …dation unaccompanied with inflammatory …ntents. When any local congestion or inflam…may be apprehended, the administration of …of disease is for the most part calculated to …Sherry is the only wine officinal in the pharma…but is generally employed in medicine; Claret and …used. When its greater strength and its astringency …ceptionable, Port wine is always to be preferred. …Claret are often inadmissible, on account of their acidity; …is not the case, the former is well adapted for …broken-down habits; the latter when the employment of …wines might prove injurious. Sherry is chiefly employed …for the preparation of the medicated wines, but Cape …usually substituted by the druggists, on account of its lower …Medical point of view, Sherry is the wine in most …and the one calculated to agree best with most …

…or Adm.—The quantity of wine which should be ad…in the treatment of disease varies so exceedingly in dif…that it is almost impossible to lay down any general …fʒviij. to fʒxx. is the quantity usually given in the 24 …it should be borne in mind that there is a great tolerance …disease. As an injection for the radical cure of hydro…thirds of Port wine are diluted with one third of water.

…; D. L. E. *Ginger. Root of Amomum Zingiber*, D. …*of Zingiber officinale*, L. E.—Supposed to be originally …of the East Indies, at present cultivated in most tropical …. It belongs to the natural family *Zingiberaceæ*, and to …an class and order *Monandria Monogynia*.

…annual, two to three feet high, cylindrical, invested with the smooth …leaves; leaves linear-lanceolate, smooth; flowers yellowish, with …ovate-shaped, radical, or rarely terminal, solitary spikes; fruit, a …

…Part.—The rhizoma or rootstalk, which is biennial, is dug up at …ment of the second year of its growth, cleaned, scalded with boiling …dried in the sun, when it constitutes what is called black ginger; to …ginger, the rhizome is not scalded, but the outer coats are removed by …

…As met with in commerce, ginger is in various-sized, …aceous, knotty, palmated, hard, and compact. *Black gin…* dirty gray colour, and rugose externally, yellowish brown …within. *White ginger* is whitish or pale yellow exter…buff within, with a somewhat starchy texture. The …of ginger are firm, sound, and heavy, and have a …aromatic odour, and a warm, very pungent taste.

C. P.—Ginger contains a pale yellow volatile oil, to which it owes its odour, a pungent resin, starch, and lignin. Its pungency depends on the resin, and its flavour on the volatile oil. Both of these, but especially the resin, are extracted by water and by alcohol.

Th. E.—Ginger is a powerful aromatic stimulant, which, even in moderation, sometimes remarkably hastens the time of the digestion of the food, and consequently, is much employed as a condiment. In medicine it is principally used to give warmth and flavour to other drugs. Ginger acts as a special stimulant to the organs of the genito-urinary mucous membrane; its use should, therefore, be avoided by persons who have any tendency to stricture of the urethra. As a general stimulant, it is employed in paralysis of the tongue, relaxation of the uvula, &c., the powder made into a paste with boiling water and spread on linen, is a speedy rubefacient.

D. & M. of Ams.—*In powder*, gr. v. to gr. xxx.—*Syrupus Zingiberis* D. L. E. (Ginger, bruised (sliced, L.), ℥v. (℥iss., L. E.); boiling water, *by measure*, ℥iij. (℥j., L. E.); pure sugar, ℥xxxij. (℥viss., L. E.); macerate (infuse, E.) the ginger in the water for 24 (4, L. E.) hours, strain, add the sugar, and make into a syrup. Dose, ℥ss. to ℥iss. The syrup may be prepared extemporaneously by adding ℥ss. of the tincture to ℥ix. of simple syrup.—*Tinctura Zingiberis*, D. L. E. (Ginger, in coarse powder (sliced, L.), ℥iss.; rectified spirit, *by measure*, ℥xij. (Oj., L. E.); macerate for 7 (14, L.) days, and filter. "Proceed by percolation or digestion as in the case of cinchona," E.) Dose, ℥ss. to ℥j.—*Essence of Ginger*, commonly kept in the shops, is nothing more than a very strong tincture.

CHAPTER XX.

SPECIAL STIMULANTS.

In this division of medicinal agents, I include those substances which, by a *special* or peculiar action on individual organs, or on the system generally, produce remediate effects. Many of these give rise to some alteration in the nature or quality of vital action, not well understood, when they are called *alteratives*; while others possess a special influence in the treatment of certain diseases, when they are denominated *specifics*. Both alteratives and specifics are found in most of the other classes of medicines; but the articles contained in this chapter exhibit, with a regard to uniformity in arrangement, no individual in any of these respects as the exclusive of the primary influence which some of them exercise on the animal economy has not been satisfactorily ascertained, and others possess a peculiar influence over certain organs or tissues. As examples of the former, we may refer to Mercury, Iodine, and Gold; of the latter, to Nitre, Arsenic, Cantharides, Opium

and deposits of the carotid and femoral, which generally [illegible] on the introduction of the tube at the wounded part to five ounces. [illegible] Continued it has been also employed at a longer [illegible] in the form of clysmata, but its use should be carefully watched [illegible]

D. & M. ss Aqu.—It should be at first given in small [illegible] a grain, which may be cautiously increased by ½ at a time [illegible] twice a day. It is best administered in the form of pill with [illegible] mucilage of gum, or with hard sugar.

Incomp.—Acids, acidulous and metallic salts.

Antimony or [illegible] Tartrate of Potassa.—*Tartar of Tartrate of Antimony.*—This substance [illegible] generally given under solution, with a view to [illegible] Two [illegible] grains [illegible] of a grain of tartar of antimony, ½ of a grain of [illegible] of the ounce, and ½ of a grain of sulphur in chemical combination.

[illegible]

To E.—This compound has been found particularly [illegible] the treatment of chronic affections depending, apparently, [illegible] scaly character, or in which the scaly is the seat of the disease. It has been also employed with benefit in removal [illegible] pimples and scaly, in lepra, in impetigo, in psoriasis, &c. [illegible] cacy in these affections is now well established, and [illegible] are few cases, even of the most chronic character, which [illegible] not be already administered. For further observations on this [illegible] I must refer to Mr. Hunter's excellent [illegible] in the *London Journal of Medical Science*.

D. & M. ss Aqu.—Min. x to xxx. Twice [illegible] a day. It should be administered properly diluted with distilled [illegible] The external use of the medicine in the form of [illegible] in the diluted state) is advantageously combined with [illegible]

Incomp.—Acids, most salts, opium, and the salts of [illegible]

Arsenic. *Gobl.*—This metal is not considered in any of the [illegible] Pharmacopœias, nor are any of its preparations employed [illegible] Great variety in the practice of medicine. They are, however, [illegible] generally administered on the Continent, and their [illegible] in [illegible] diseases highly spoken of. Although it has been [illegible] that metallic gold is perfectly inert, a powder of gold [illegible] is alleged in the Pharmacopœia Gebet. It is proposed to [illegible] one of the simplest and best is to put [illegible] 7 or 8 [illegible] in weight of sulphate of potash [illegible] or other quality as long as any [illegible]

Acetic protochloride of Gold.

Formula for Gold: [illegible]

P. A. C. P.—Acetide of gold is a greenish-yellow powder, easily fusible, and very sparingly soluble in boiling water. Exposed to a heat of about 300° F., the acetate is decomposed, and metallic gold left. It is composed of 2 eq. of gold and 1 of acetate, A.C.O. (Graham).

Uses.—This preparation is a very active poison, more so than muriate of gold; it is employed in removal and scrofulous affections, in doses of $\frac{1}{12}$ to $\frac{1}{6}$ of a grain, in the form of powder, or of pill combined with powdered gum arabic, as it is decomposed by most vegetable substances.

Acetic protochloride. *Protochloride of Gold. Sesquichloride of Gold.*

Formula for Gold: [illegible]

P. A. C. P.—Sesquichloride of gold is in the form of needle-like prismatic crystals, of a golden-yellow colour; it is tasteless and has a very styptic, disagreeable taste. In dry air it remains unaltered, but deliquesces rapidly in damp air. Water, alcohol, and ether dissolve this salt; the solution is of a yellow colour, and in time reduces paper; exposed to the light, although kept in stoppered bottles, it is decomposed, and gold deposited on its surface. Sesquichloride of gold is composed of 2 eq. of gold and 3 of chlorine, A.C.T. (Graham).

Uses.—This salt is the most generally employed of the preparations of gold. It is exceedingly active, as small a dose as $\frac{1}{24}$ of a grain has, in the hands of Cullerier at the second stage produced [illegible] and destruction of the tongue, redness of the throat, cough, and [illegible]. It is employed, it is said with much success, in the [illegible] and secondary, pre- [illegible] fail to do good. It

has also been used in scrofulous and herpetic affections, &c. As an external application, it has been employed [illegible] to ulcers, to burns, and to obstinate syphilitic eruptions.

D. & M. or Ant.—It may be given in doses of [illegible] grains once a day, made into pills with starch or [illegible] dilled water. The same quantity, intimately mixed with [illegible] starch, may be applied by friction to the gums and tongue.—*Chloride of Bromine.* (Chloride of gold, gr. vj.; dilute hydrochloric acid, ℥j.; dissolve.) Applied by means of a pencil of lint [illegible] it; the eschar which it forms falls off in a few days, and leaves a clean, healthy surface underneath.—*Sodii Auro-chloridum.* L. Chloride of gold, 80 parts; chloride of sodium, 16. Dissolve in a small quantity of distilled water; concentrate with gentle heat, till a pellicle begins to form on the surface; then set aside to crystallize.) Chloride of gold and sodium is employed in the same manner, and in the same doses, as [illegible] of gold. It is less expensive, and nearly, if not quite as active. An ointment of it, prepared by rubbing ½ of a grain with gr. xxx of lard, may be applied to the skin denuded of the epidermis.

Incompt.—Most metals, and their salts; sugar; gum; [illegible] tannic; extractive.

In poisoning with chloride of gold, or with chloride of gold and sodium, the same treatment should be adopted as in poisoning with corrosive sublimate. (See page 339.)

Auri purpuratum. *Purpurate of Gold. Sesquioxide of Gold. Auric Acid.*

Prep.—Ph. Dub.: Chloride of gold, 1 part; calcined magnesia, 4 parts; [illegible] 40 parts; boil gently for a short time; when the precipitate has subsided, wash it with water, and then dissolve it in nitric acid; let the solution stand for a few days in the dark, when the purpurate will be deposited.

P. & C. P.—Auric acid is of a chestnut-brown colour, becoming yellowish when moistened. It is insoluble in water, is readily decomposed by exposure to light or heat, and combines with [illegible] to form salts. It is composed of 2 eq. of gold, and 3 of oxygen, Au^2O^3 (Graham).

Th. P.—It is used in the same cases as the other preparations of this metal. Dose, $\frac{1}{12}$ of a grain to ¼ of a grain.—*Pilulæ Auri purpurati, Maccabæi.* (Oxyde of gold, gr. vj.; extract of [illegible] ℥j.; divide into 60 pills.) Dose, j to [illegible] daily.

Bromidum, L. *Bromine.*—This elementary fluid has not been introduced into the London Pharmacopœia for [illegible] *bromide of potassium.* It has been employed in the [illegible] the same cases as iodine, from which it is said to [illegible] It has not been hitherto used in Great Britain. One [illegible] same dissolved in 10 parts of water, and the solution [illegible] some aromatic water, may be given in doses of five [illegible]

Chlorum, L. P. [illegible]

...milder in the former part of the consul. The dose of this mixture is ...this three times a day.—*Oleum Copaibæ*, E. The oil is preferred ...ought to any other preparation of copaiva, but I have frequently ...seen it fail; the dose is from min. xx. to min. xxx., dropped on ...sugar.—*Resina Copaibæ*. This preparation is very properly almost entirely discarded from practice; the dose of it is from gr. x. ...xx.

Cubeba, D. E. *Piper cubeba*, L. *Cubebs. Fruit of Piper Cubeba.*—A native of Java and Prince of Wales's Island, belonging to the natural family *Piperaceæ*, and to the Linnæan class and order *Dioecia Triandria*.

...Stem ligneous, ascending, knotty; leaves petiolated, ovate-oblong, downy on an elevated pointed nerve; fruit a pedunculated small berry; the peduncles are nearly equal to the spike.

...Cubebs are the dried unripe berries; they are about the size of black pepper, wrinkled on the surface, brownish externally, whitish and oily within. They have a small portion of the pedunculus attached, whence the name *Piper caudatum* has been applied to them. Their odour is strong, peculiarly aromatic; their taste ...pungent, and very spicy.

...Cubebs are composed of 2·6 per cent. of green volatile oil, 1 per cent. of yellow volatile oil, 4·6 of a peculiar principle termed *Cubebin* (which is probably identical with *Piperin*), 1·6 of ...resins, fats, and wax, lignin, &c. The volatile oil, *Oleum Cubebæ*, is obtained by the usual process of distillation with water; ...is of a pale greenish-yellow colour, transparent and limpid, with ...the peculiar odour and taste of cubebs. Its density is 0·920, and ...its composition $C^{10}H^{8}$. Cubebs yield their properties very partially to boiling water, but completely to alcohol.

...Cubebs possess the stimulant and carminative properties of the other peppers; but they also exercise a specific influence ...the urinary organs, indicated by their power in arresting urethral discharges. They are only employed in medicine in the ...treatment of gonorrhœa, for which they are held by many to be equal, if not superior, to copaiva. We are perfectly ignorant as to ...the manner in which cubebs cure gonorrhœa; but their specific influence appears to be exercised only in the early stages of the disease, for they usually fail to prove beneficial when the discharge has existed for any time; they should, therefore, be administered ...on the first appearance, when, if the cooling is not checked by from ...two to five days, their continued use will in most instances do ...more harm than good. Cubebs have been also employed in hæmorrhoids and in catarrh of the bladder with doubtful benefit.

...M. or Ss. in powder, which is the best form, ʒj to ʒiij, ...three times a day. The powder should be always prepared fresh ...as it, as, owing to the quantity of oil, it deteriorates rapidly. ...The liquor may be given in doses of ʒj to ʒij, the more active ...of the preparations, but may be administered conveniently in milk ...or in water.—*Oleum*, E. ...three times a day.

peel on sugar; it is not so certain in its effects as the preceding. *Tinctura Cubebæ*, D. L. (Cubebs (bruised, L.) proof spirit (rectified, L.) ounces, Dose (D.), L.) a drachm to two or three. (L.) This tincture is generally added to a mixture containing copaiva. Dose, ℥ss to ℥j.

Fucus vesiculosus, herba cum vesiculis, D. *Bladder* Wrack. A very common seaweed on our shores, belonging to the natural family *Algaceæ*, and to the Linnæan class and order *Cryptogamia Algæ*. This seaweed contains *iodine*, and before the discovery of that substance, the expressed juice was given in the same doses as the fresh plant applied externally in scrofulous and glandular enlargements.

Hydrargyrum, D. L. E. *Mercury. Quicksilver.* Mercury is met with in the metallic state in the quicksilver mines of South America. It is principally brought to England from Almaden in Spain, and from Idria in Carniola, where it is extracted from the native sulphuret, *Cinnabar*.

Pure.—It is procured from cinnabar either by distilling with caustic lime or by treating the ore with iron filings or copper, &c. It is generally contaminated with various metallic impurities, for the removal of which the following processes are employed. D. "Mercury 5 parts; dried chloride of iron 4 parts; water 4 parts. Rub them together in a mortar, and then distil the mercury from a glass retort." L. "Mercury 5 parts; dried sulphate of iron 4 parts; water 4 parts. Rub them together in a mortar, and then distil the mercury from a glass retort."

P. & C. P.—At ordinary temperatures, mercury is liquid, and has a silver-white colour, with a bluish shade, and is very heavy; its sp. gr. is 13·5 when liquid, and 14·0 when solid. It boils at 662°, and solidifies at 39° or 40° below zero, crystallizing in regular octahedrons; exposed to the air at the usual temperature, it remains unaltered if pure, but otherwise the surface soon tarnishes; if agitated for some time in contact with the air, it is converted into a grayish black powder, which was formerly called *Ethiops mineral*; this, according to some chemists, is a subchloride of mercury, according to others, it is the metal in a state of very minute division. Mercury combines with most metals to form amalgams; the slightest trace of it communicates a white stain to gold or silver.

Adulterations.—Tests for the purity of metallic mercury are given by the London and Edinburgh Colleges. "Entirely evaporated in vapour by heat. Dissolved by diluted nitric acid, and boiled in hydrochloric acid, the acid, when cold, is not rendered turbid by anything precipitated from it by hydrosulphuret of ammonia. Its sp. gr. is 13·5." L. "Entirely sublimed by heat; a globule rubbed along a sheet of paper leaves no trace; pure sulphuric acid boiled with it evaporates when heated, without leaving any residue." E. "By the application of these tests, the usual metallic impurities, such as tin, lead, zinc, or bismuth, are readily detected."

Th. E.—As long as mercury remains in the metallic state, it is now generally agreed that it does not exercise any specific action on the human body, and does not enter the circulation; but when it is oxidized, it must be considered as a true poison, and the symptoms of poisoning by corrosive sublimate, or any other preparation of

a second article, for any lengthened period produces a singular
f symptoms which principally affect the nervous system; the
ost visible of these is the *shaking palsy*, or *trembling mercu-*
r which the muscles of the arms become so unsteady as al-
o place them completely out of the control of the individual.
isorder is not uncommon among the workers in quicksilver
ines, and others whose trade exposes them to the vapour
ercury. The effects of the mercurial compounds on the hu-
y are very complex, and, as they are possessed in common
ost of the preparations employed in medicine, they will be
onveniently considered here.
ysical effects of the preparations of mercury are primarily
ical irritant, *secondarily* they act as *special stimulants* both to
on and excretion. The most remarkable effect of mercury
ction on the salivary glands, *salivation*. When this medicine
troduced into the system in such a manner as to excite this
ecific state, at first it produces increased vascular action, shortly
ed by a metallic or brassy taste in the mouth, and a slight
ad fetor of the breath; the gums become somewhat swollen
ender at their edges, soon presenting a slight degree of ulcer-
the lining membrane of the cheeks, and sometimes also of
ips, acquires a leaden hue, and is swollen; and an increased
f saliva takes place, accompanied with pain in the teeth, in
ds pressure. If these symptoms be allowed to advance, or
e mercury be administered, the cheeks, the tongue, and the
ls swell and ulcerate, and a copious flow of saliva, sometimes
ing to several pints in the twenty four hours, is induced;
excessive salivation is accompanied with slow fever and rapid
ess. The quantity of mercurial preparation required, or
gth of time for which it must be administered to produce the
effects, varies exceedingly in different constitutions and under
e circumstances. Individuals are sometimes met with in
almost the minutest dose of any preparation of mercury will
e most violent salivation; while, on the other hand, some
appear to be totally insensible to the operation of the drug.
s been held by many that the production of this specific ef-
mercury is necessary to the development of its curative
; and most unquestionably it occurs that its salutary influ-
the treatment of most diseases is contemporaneous with its
on the salivary glands. Great attention must, however, be
paid not to allow salivation to proceed too far, as a frightful
of symptoms, in many instances followed by death itself,
ural result of excessive salivation. In the early stage, mer-
n is most decidedly checked by the use of active or diure-
rs of bitter emetic, and by keeping the surface of the body
and the face and neck cool. The effects of mercury on the
are sometimes accompanied with a peculiarly alarming
ion described by Mr. Pearson, under the name of mercurial
, that is characterized by great depression of strength, a
y anxiety about the precordia, frequent sighing, trembling

contributed to bring this valuable remedy into [illegible]
With respect to the general treatment during a [illegible]
the most important points to be observed are, the [illegible]
and quietness of both mind and body, the [illegible]
state of the surface by warm clothing, and [illegible]
moderate diet, and the [illegible] [illegible]
powerful preparations, a portion of the mercury [illegible]
salivate it, but the greater part of it is [illegible]
duced to a finely divided state.—*Pilulæ Hydrargyri*, D. L. [illegible]
(See page 101.) Dose, gr. iij. to gr. v., night and [illegible]
should occasion irritation, a fourth of a grain of [illegible]
of to each pill.—*Hydrargyrum cum Creta*, D. L. E. (See page [illegible]
This is the mildest preparation of mercury; as an [illegible]
dose is from gr. v. to gr. xxx. It is seldom given [illegible]
tion of producing salivation, except in very weak [illegible]
its.—*Hydrargyrum cum Magnesia*, D. (See page 107.)—*[illegible]*
tum Hydrargyri, D. E. *Unguent. Hydrargyri fortius*, L. [illegible]
rified mercury, prepared lard, of each, equal parts: [illegible]
gether in a marble or iron mortar until the globules of [illegible]
appear," D. "Mercury, ℥iij; lard, ʒxxiij; suet ʒ[illegible]
mercury with the suet and a little of the lard till globules [illegible]
longer visible, then add the rest of the lard, and mix [illegible]
thoroughly," L. E. "This ointment is not well prepared [illegible]
as metallic globules may be seen in it with a magnifying [illegible]
powers, L.)—*Unguentum Hydrargyri Mitius*, D. "Mix [illegible]
twice as much lard as the last," D. "Mix ℥ij of the [illegible]
ointment of mercury with ℥iij of lard," L. "The [illegible]
ointment diluted with twice or thrice its weight of [illegible]
Mercurial ointment is very frequently employed for introducing
mercury into the system; and for this purpose, [illegible]
stronger ointment may be rubbed carefully into the [illegible]
thighs every morning. Should it be desirable to produce a [illegible]
salivation, it may be used as a dressing to blistered [illegible]
ʒj. or ʒij. placed in each axilla. When employed to [illegible]
dispersion of glandular or argentous, it should be [illegible]
seat of the disease. The milder ointments are generally [illegible]
ing to external signs.—*Certum Hydrargyri compositum*, L. [illegible]
ointment of mercury and soap cerate, of each, [illegible]
rub together until they are incorporated." Employed [illegible]
the dispersion of indolent tumours, and as an [illegible]
eruptions of the pustular kind.—*Linimentum Hydrargyri* [illegible]
(Strength: mercurial ointment and lard, of each [illegible]
rectified spirit, five solution of camphor, [illegible]
first with the spirit, then with the lard, and [illegible]
lastly the solution of camphor being gradually [illegible]
ʒij.) A stimulating liniment, applied to [illegible]
contains nearly gr. x. of mercury. It produces [illegible]
specially.—*Emplastrum Hydrargyri*, L. [illegible]
plaster, ℥j.; [illegible] all [illegible]
ally to the breast of nursing [illegible]

ous Sublimate; Chloride of Mercury. [Hydrargyri Chloridum Corrosivum, U. S. P. *Corrosive Chloride of Mercury.*]

U. P.—Corrosive sublimate is met with in the [illegible] semi-transparent, crystalline form of it is white powder [illegible] sublimation it may be obtained in regular crystals [illegible] form of which is the right rhombic prism. It is [illegible] an acrid taste and disagreeable taste. It is [illegible] 6·5 (Ure).

C. P.—Although the salt is called a bichloride [illegible] Pharmacopœia, more recent chemical investigations [illegible] to be a simple chloride, its composition being $HgCl$ [illegible] next to the air; it fuses at 401°, and boils at about [illegible] pour is colourless, but very acrid. It is soluble in 16 parts [illegible] and in 3 parts of boiling water, in 2½ parts of alcohol, and [illegible] of ether. Its solubility is much increased by the addition [illegible] ate acid or of the alkaline muriates. A solution of [illegible] limate gives a yellow precipitate, with hydrates of potash [illegible] brown; a red precipitate with alkaline carbonates; a white [illegible] iodide of potassium; and a black with sulphuretted [illegible] Dropped on gold, it does not tarnish it, but if the [illegible] be touched with a piece of iron or zinc, mercury is [illegible] precipitated, and leaves a white stain on the gold, which [illegible] removed by heat. Corrosive sublimate may be [illegible] solution in water by agitation with ether.

Test.—[illegible] of mercury *by parts*, [illegible] of [illegible] up from well-bleached [illegible] to [illegible] until a [illegible] then, from a proper vessel, receive the [illegible] [illegible] *Mercury.* To [illegible] add [illegible] of [illegible] [illegible] mercury with the sublimate, add to a proper vessel [illegible] remains dry; rub [illegible] with the chloride of [illegible] mortar, with [illegible] a heat gradually raised." [illegible] "[illegible] [illegible] acid, [illegible] [illegible] [illegible] [illegible] [illegible] save the mercury in them with the aid of a moderate heat, reduce the [illegible] a dry salt; triturate this well with the [illegible] of lime, [illegible] apparatus."

Adulterations. Corrosive sublimate [illegible] purity, its solubility without any residuum, and its [illegible] easy solubility in sulphuric ether, the tests given by the [illegible] College, are sufficient to detect any adulteration.

T. D.—Corrosive sublimate is a powerful corrosive poison, [illegible] grains producing death, preceded by rapid and [illegible] [illegible] tion of the digestive tube, with great derangement of the [illegible] system and coma. In small repeated doses, it produces [illegible] action of a mercurial, but salivation is rarely produced [illegible] and its effects are more decidedly [illegible] than [illegible] preparation of the metal. It is, consequently, much [illegible] those who believe that ptyalism is not essential to [illegible] levels of mercury in the treatment of [illegible] [illegible] sublimate is employed with much benefit in [illegible] [illegible] [illegible] [illegible] [illegible]

[illegible] of bread and [illegible] pills. Each of these pills contains [illegible] sublimate. Dose, 4 daily. For a lotion [illegible] may be dissolved in ℥ij. of distilled water; [illegible] solution may be employed: *Liquor Hydrargyri* [illegible] (bichloride of mercury and hydrochlorate of [illegible] gr. x.; distilled water, Oj.; dissolve together in the [illegible] for internal use, ℥ss. to ℥ij.

The alkalies and their carbonates; lime and its carbonate; nitrate of silver; acetate of lead; [illegible] albumen; soaps; decoction of bark, &c. — [illegible] of poisoning with corrosive sublimate, albumen, [illegible] the best antidote; in its absence, wheaten flour [illegible] may be used.

[illegible] HYDRARGYRI CYANIDUM, L. HYDRARGYRI CYANURETUM, E. U. S. P. *Cyanide of Mercury; Cyanuret of Mercury; Cyanide*

This salt is met with crystallized in rectangular prisms, transparent or opaque, colourless and inodorous, with a [illegible] metallic taste.

This is a cyanide of mercury, its composition being $Hg Cy$. Anhydrous; is permanent in the air; exposed to heat, it [illegible] into metallic mercury and cyanogen gas. It is soluble [illegible] of water at 60°, and in much less boiling water; it is [illegible] freely soluble in alcohol.

[illegible] "Cyanuret of iron, 6 parts; nitric oxyde of mercury, 8 parts; [illegible] 36 parts; mix the cyanuret of iron and oxyde of mercury, and add the [illegible] gently heated; boil for half an hour with constant agitation, and filter [illegible]; wash the residuum frequently with warm distilled water. Lastly, [illegible] filtered liquors, and crystallize by cooling." *Lond.* "Precipitate of [illegible] binoxyde of mercury, ℥x.; distilled water, Oiv.; boil them together for [illegible] and strain. Evaporate the liquor, that crystals may be formed. Wash [illegible] frequently with boiling distilled water, and again evaporate the mixed [illegible] crystals may be formed. Bicyanide of mercury may be otherwise prepared as much binoxyde of mercury as will accurately saturate it to hydrocyanic acid distilled from ferrocyanide of potassium with diluted sulphuric acid."

This salt resembles in its effects corrosive sublimate; to be preferred by many, as being more soluble, and not so decomposed. In Great Britain, however, it is rarely used, and has been introduced into the Pharmacopœias as a hydrocyanic acid.

[illegible] OF ARS.—Same as for corrosive sublimate.

[illegible] Sulphuric and muriatic acids; sulphuretted hydrogen. [illegible] sulphates.

[illegible] IODURETUM, L. E. [U. S. P.]. *Biniodide of Mercury; Iodide of Mercury; Red iodide of Mercury.*

P. P.—It is a brilliant red powder, which may be [illegible] rhombic crystals by sublimation. It is [illegible] and strong muriatic acids. Its sp. gr. is 6.82.

C. P.—It is composed of 1 eq. of mercury and 1 of [illegible]. It is permanent in the air; heated moderately, it becomes [illegible] at a temperature of 400°, it fuses, and at a higher temperature sublimes. Cooled rapidly, it recovers its red colour, but if cooled slowly it remains yellow, in which state, when reduced to a red heat it immediately reproduced. It requires [illegible] times its weight of water for solution, but it is much more soluble in alcohol and acids, particularly with the aid of heat. It [illegible] in a boiling solution of common salt, but a more [illegible] is formed as it cools.

Pure.—Lond. "Mercury, [illegible] sulphur, [illegible] and rubbed together, [illegible] the whole [illegible] Dry the powder with a gentle heat and keep it in a well-stopped [illegible]." Ed. "Mercury, [illegible] sulphur, [illegible] rubbing it [illegible] to form the [illegible] sublimate [illegible] a flask [illegible] till a moderate [illegible] is obtained." Dub. "Let [illegible] with [illegible] of sulphur [illegible] of soda with [illegible] of lime [illegible] powder, [illegible] rubbing the mixture [illegible] sublimate [illegible] cooling."

Adulterations.—Owing to faulty preparation, [illegible] of mercury is apt to contain some of the oxide or sub iodide, a certain [illegible] of mercury, derived from impurity in the [illegible] employed. These, as well as any fixed [illegible] guarded against by the tests of the *Edin. Pharm.* "It [illegible] is [illegible] by heat; soluble entirely in 40 parts of a [illegible] solution of carbonate of soda at 212°, and again deposited in [illegible] crystals on cooling."

To E.—This is an exceedingly active preparation, producing violent inflammation when placed in contact with the [illegible]. Its medicinal properties appear to resemble much [illegible] mate, and may be employed in the same cases. In [illegible] a grain given twice daily, and continued for some time, I have found it to act as an excellent tonic in scrofulous [illegible] As a local remedy, in the form of ointment, it is applied with [illegible] chronic glandular enlargements. Its use, however, requires [illegible] caution, especially when applied to raw surfaces.

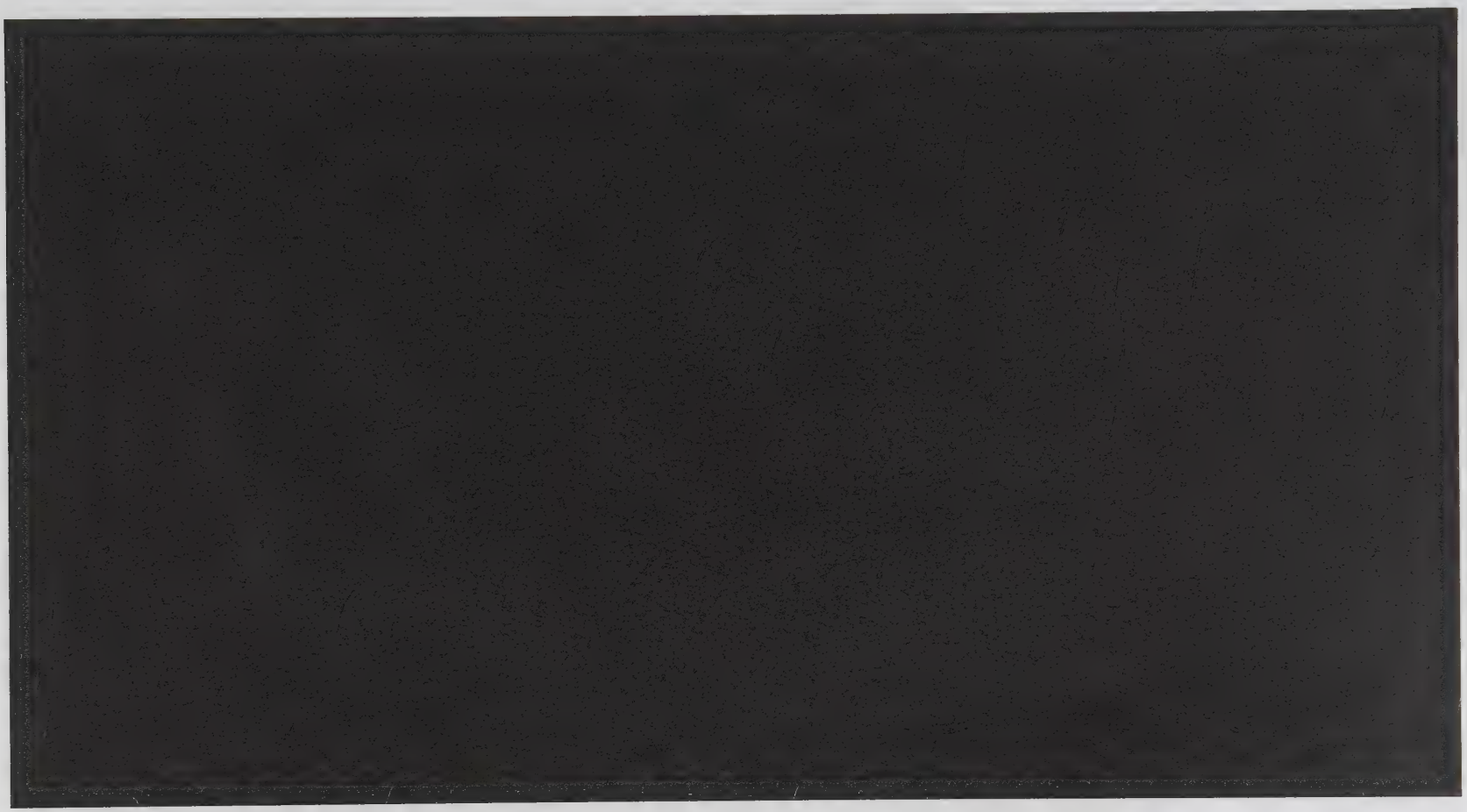
U. A. M. or Acet.—Dr. ½ to gr. j. rendered into pill with [illegible] the soda vegetable extract.—*Unguentum Hydrargyri Iodidi Rubri*, L. (Biniodide of mercury, 3ij; white wax, 3ij; lard, 3vj; rub well together.) This ointment is much too strong for ordinary use, and should be [illegible] with three or four times its weight of lard.

Hydrargyrum cum Creta, L. Calomel, D. E. [illegible] mercury with chalk, U. S. P. *Mild Chloride of Mercury with Chalk* (Hydrargyrum cum Creta, Ed.) is the name [illegible] the mixture of the proportions [illegible] proper to produce the mildest effects of [illegible]

[illegible] powdered, 3j; lard [illegible] 3iij; rose ointment [illegible] 3vj. Mix. [illegible] of the London. Dose, gr. x to xx, or more. [illegible] extract *Hydrargyri cum Creta*, L. [illegible] of mercury, 3j; [illegible] 3j; lard [illegible] 3iij. Mix. [illegible] of mercury in the [illegible] ointment, and [illegible]

HYDRARGYRI NITRATIS UNGUENTUM, B. P. L. UNGUENTUM CITRINUM, D. E. *Ointment of the Nitrate of Mercury. Citrine Ointment.*

[illegible] — Take [illegible] powdered, mercury, by weight, [illegible] olive oil, and [illegible] [illegible] Dissolve the mercury in the nitric acid, then add the oil, and [illegible] of red lead, and [illegible] an ointment in the usual manner. — Lond. "Mercury, 3j; nitric acid, fluid [illegible] lard, 3iij. Dissolve the mercury in the acid. Then add the lard, and [illegible] the red mercurial ointment separates." — Edin. "Dissolve mercury [illegible] in a [illegible] nitric acid [illegible] ounces; then [illegible] [illegible] ounces, and [illegible] [illegible] ounces, and [illegible] [illegible] ounces, and



part ; expose them, mixed, in a glass vessel, and moisten the mixture with [illegible] dry, when nothing is evolved."

This preparation, the composition of which is $Hg(NO_3)_2$, has not been used in medicine. It is introduced into the Pharmacopœias as being employed in the preparation of calomel [illegible] mercury (see page 203), of *sublimed calomel*, and of corrosive sublimate.

HYDRARGYRI BICHLORIDUM AMMONIATUM, D. HYDRARGYRUM CHLORATUM, L. HYDRARGYRI PRECIPITATUM ALBUM, E. *White Precipitate. Ammoniated Subchloride of Mercury. Ammoniated Chloride of Mercury. White Precipitate of Mercury.*

P. & C. P.—This preparation is in the form of a heavy white powder, colourless but having a styptic, metallic [illegible] a little chloramidide of mercury, as its name implies, Hg_2NH_2Cl (Kane). It is insoluble in cold water; by boiling water it is decomposed into sal-ammoniac, which is dissolved, and into a yellow powder (*chloramidide and bioxyde of mercury*), which is insoluble in water. White precipitate may be distinguished from calomel by solution of ammonia, which dissolves the former, but blackens the latter. When heated suddenly, it is completely dissipated.

PREP.—[illegible] "Add to the liquor which is poured off most [illegible] sufficient water of caustic ammonia to throw down the [illegible] and wash it [illegible] with cold water, and keep it [illegible] paper." *Lond.* "[illegible] of mercury, [illegible] ammonia, [illegible] water [illegible] with the aid of heat. Dissolve the corrosive sublimate in the water with the aid of heat, when cool add the ammonia, stirring briskly; collect the powder [illegible] a filter, wash [illegible] and dry it." *Edin.* "[illegible] water and wash [illegible] a free [illegible] dry at 212°." *Dub.*

Adulterations.—I have never met with any impurity in this preparation. The London College have given the following test of its purity, which [illegible] to its adulteration with chalk, with white lead, with sulphate or carbonate of lime, or with the oxyde of mercury. "Totally evaporated by heat. When digested with acetic acid, [illegible] of potassium throws down a [illegible] yellow or [illegible]. The powder ignited with [illegible] does not become black. It is totally dissolved by hydrochloric acid, [illegible] effervescence. When heated with solution of potash it [illegible] yellow, and emits ammonia."

USE, E.—White precipitate is not used as an internal remedy. Externally, in the form of ointment, it is an excellent [illegible] many forms of cutaneous diseases, as herpetic [illegible] eczema, impetigo, &c. *Unguentum Hydrargyri ammoniati*, D. *Hydrargyri ammoniati Unguentum*, L. *Unguentum album*, E. (White precipitate [illegible] prepared [illegible] white precipitate to the hard [illegible] over a slow fire, and mix.)

HYDRARGYRI SUBCHLORIDUM VAPORE, L. [illegible] *Calomel. Submuriate of Mercury.*

P. & C. P.—[illegible]

Iodum. *Iodine.*—A peculiar substance obtained from the ash of several species of the genus *Fucus* (Nat. Ord. *Fucaceæ*; Linn. Cl. *Cryptogamia*), which are natives of India and belong to the natural family *Leprosæ*, and to the Linnæan class and order *Diadelphia Decandria*.

P. & C. P.—Iodine as met with in commerce, is of a dark-colour, shaded with violet, smooth and hard, solid, of a metallic appearance. It is heavy, but has a crystalline texture. It is a compound substance, consisting of a principle, *iodine blue* (*iodigene*), *iodine brown*, and *iodine red*. The chemical symbol of iodine blue is $C_{11}H_{12}NO_2$. It is insoluble in water, slightly soluble, cold in ether, it is partially soluble in boiling water.

The Iodine has been recently employed in the treatment of nervous and spasmodic affections, and with great success. The diseases in which it has been found especially benefit are idiopathic epilepsy, chorea, hysteria, and tetanus. It should be given in as large doses as the patient can bear, first, as I note with much advantage in chorea, that the dose at first should not exceed five grains three times a day, but it should be rapidly increased until 15, or even more, are taken daily. It is best administered in the form of tincture, made with one part of iodine, and two of strong spirit, with which properties are in general combined. The author also recommends it as referred to the *British and Foreign Medical Review*, page 214.

Iodidum, D. L. Iodurum, E. *Iodine.*

P. P.—Iodine is generally met with in the form of scales. The scales, often accreted into masses of a black colour, have a metallic lustre. It has a strong, disagreeable odour, like that of chlorine, and a very acrid taste. From a solution it may be obtained in the form of crystals, which are octahedrons with a rhombic base. Its density is 4·948.

C. P.—Iodine is an elementary body existing in small quantities in both kingdoms of nature. It evaporates slowly at the common temperature if exposed to the air, and more rapidly if moistened; fuses at 225° and boils at 347°. Exposed to the action of chlorine, it is volatilized in the form of a beautiful yellow vapour, from whence it has derived its name [illegible]. Two hundred parts of cold water dissolve only one part of iodine, but it is much more soluble in alcohol, ether, and in solutions of the iodides of metals. [illegible] the best chemical tests of iodine [illegible] (see page 184).

quent, small pulse, great weakness, fainting fits, coldness, ...ally with diminution of the secretions, ... sages, and terminating in death if the remedy be ... time. Iodism is, however, at the present day, ... when it does occur, it is easily checked by suspending ... the medicine.

Iodine is a most valuable remedial agent in the ... disease, enlargements, and in scrofulous affections; but its ... ment is sometimes—even when acute affections are ... *bronchocele*, it has proved more successful than any other ... which has ever been used; indeed, there are few cases ... where the thyroid gland has become completely disorganized ... will withstand the use of iodine when continued steadily ... weeks or two months; and even cases where the gland ... indurated are often remarkably relieved. In the ... tubercles of scrofulous affections, this remedy is ... and with decided advantage. It is found ... glandular swellings, tumours, abscesses, ulcers, ... diseases of the bone occurring in scrofulous ... has also proved eminently serviceable in chronic ... the abdominal viscera, particularly the liver, spleen, ... In fact, it has been proposed as a remedy in ... rheumatism, in leucorrhœa, in gout, in palsy, in chorea, in ... chronic cutaneous diseases, &c.; but in all these cases, ... is very equivocal. The inhalation of the vapour of iodine ... was at one time very much used in the treatment of *phthisis* and ... bronchitis, but general experience has proved its ... potion, composed of one part of tincture of iodine ... of water, is used after heating for the topical ... Topically, iodine is employed in the form of ... as a local stimulant in many forms of chronic ... to enlarged glands, in chronic swellings of the joints, ... bones, &c.

D. & M. *ex Ann.*—Iodine is not administered in ... following are the simple preparations which are ... played, but it is usually given in combination with ... *Spiritus* (see page 355). *Tinctura Iodinii*, U. S. ... [illegible]; rectified spirit, ʒj. 9ij. [illegible]; dissolve the ... with the aid of a gentle heat and agitation; keep ... well-closed bottles.] One fluid ounce (*Ph. L.*) ... iodine. Dose, ten to sixty minims, two or three times ... may be given in [illegible] and sweetened with ... *Unguentum Iodinii*, D. [illegible] ʒj, prepared lard ... together, so as to make an ointment.] The ... is seldom used in the present day.

In poisoning with iodine, ... their operation in the ... [illegible] ... starch, flour, &c., [illegible] ...

Mode of action. ... [illegible] ...

bound of Ceylon; belonging to the natural family Apocynaceæ, to the Linnæan class and order *Pentandria Monogynia*.

P. P.—Stem [illegible], ascending, [illegible] about [illegible] feet high, [illegible] thick, rounded, nearly flat, [illegible] by cutting on one side, convex on the other. [illegible] of an ash-grey colour, rather, covered with short, [illegible] internally they consist of a tough, white or [illegible] which separates into two parts, and resembles [illegible] the circumference, the centre with [illegible] two [illegible] Nux-vomica seeds are with difficulty reduced to powder [illegible] hardness, but have no taste, scarcely [illegible] taste. [illegible] been met with in British commerce [illegible] the nux-vomica bark (see Cinchona).

C. P.—Nux-vomica consists of two peculiar alkalies, [illegible] and *brucia*, in combination with a peculiar acid, [illegible] and *n*, with other unimportant matters. [illegible] depend on the alkaloids, the former of which [illegible] and is officinal in the London and Edinburgh [illegible] is prepared as follows:

Powder.—Nux-vomica, [illegible] lb., reduced [illegible] and sufficient [illegible] of alcohol, [illegible] [illegible] with a gallon of the spirit for [illegible] a week, [illegible] Pour off the liquor, and [illegible] and a third time [illegible] the liquor [illegible] of acetic acid [illegible] [illegible] and to the solid [illegible] [illegible] and [illegible] [illegible] [illegible]

silver, precipitating a yellow bromide of silver, which is [illegible] by excess of, but is redissolved by ammonia. [illegible] silver to that of silver from the [illegible] owing to the presence of a chloride.

Use, &c.—The effects of bromide of potassium appear to be [illegible] those of iodide of potassium, which will be [illegible] Dr. Williams, of London, employed it internally in [illegible] of the spleen, in which he states that it possesses [illegible] specific powers. But it has not proved equally [illegible] hands of other practitioners. Externally, it has been [illegible] the form of ointment to scrofulous and nitrous [illegible].

D. & M. or Aqua.—Gr. ij to gr. xij [illegible] dissolved in water and sweetened with sirup. For an ointment, [illegible] of the salt may be combined with 3j of lard; or [illegible] of bromine are usually added to this ointment.

Incomp.—Acids, acidulous and metallic salts.

Potassæ iodidum. L. E. Potassæ Hydriodas. D. *Iodide of Potassium; Hydriodate of Potash.*

P. & C. P.—This salt crystallizes in white, opaque [illegible] quadrangular prisms; at present generally met with in the form of well-defined cubes six to eight lines square, and having a pearly lustre. It has a pungent, saline taste, but is inodorous. It does not deliquesce when pure, unless there is much moisture in the atmosphere; exposed to heat, it decrepitates, and melts at a red heat, but is not decomposed. 100 parts of water at 60° dissolve 143 parts of the salt; it is soluble in 3 or 4 parts of [illegible] The watery solution is neutral when pure. It possesses the property of dissolving iodine in large quantity, forming a strong [illegible] *iodohydrial iodide of potassium.* The composition of [illegible] tassium is K I.

Sect.—*Dos.* ℞ Iodine, 1 part; sulphuret of iron, a sufficient quantity; [illegible] phuric acid, 4 parts; distilled water, 32 parts; water of ammonia of commerce, [illegible] sufficient quantity, 6 parts; and the iodine by triturating with it, gradually [illegible] and put the mixture into a glass vessel. Pour on the acid previously diluted [illegible] parts of water, and the solution in a matrass and add a little [illegible] of the mixture and reserving to the bottom of the [illegible] the vessel, pass the gas through the mixture until the yellow [illegible] nearly evaporate the filtered liquor with a moderate heat to dryness, [illegible] Dose 5 grains. Dose, adult, 5 grains or more; [illegible] of potash or soda, which is formed by the decomposition of the [illegible] Thus expose the mixture to heat, add a little water, and [illegible] part of the [illegible] and dissolve with heat. Finally, pass the liquor through a [illegible] to dryness, and preserve in well-stopped bottles. Dose, [illegible] grains, [illegible] grains. [illegible] Dose, [illegible] grains, [illegible] grains. [illegible] Dose, [illegible] grains, [illegible] grains. [illegible]

potassium, in the form of ointment or of lard, as previously mixed with the internal administration.

D. & M. to Adult.—Gr. v. to 3j. gr. xv; these must be given in half doses, increased as the individual can bear. It is best administered simply dissolved in water and sweetened with syrup; or in some kind of infusion of quassia. The power of the solution of iodine has been before referred to.—*Liquor Potassæ Iodidi* and *Iodinei Liquor comp.*, L. (Iodide of potassium, gr. x. (5j.); iodine, gr. v. (3j.); distilled water, O. (Troy., L.); mix (with the aid of gentle heat and agitation, L.) dissolve.) Dose, 3j. (3j. to 3ss.; L. min. v. to min. xv. It may be further diluted with water.—*Tinctura Iodini comp.*, L. (Iodine, iss.; iodide of potassium, 3ss.; rectified spirit, Oj.; macerate until they are dissolved and strain.) Dose, min. x. to min. xxx. in 3j. of any convenient water, or in white wine.—*Unguentum Potassæ Hydriodatis*, L. (Hydriodate of potash, 3j.; prepared lard, 3v.; rub together and mix into an ointment.)—*Unguentum Iodini comp.*, L. *Unguentum Iodinei*, E. (Iodine, 3ss.; iodide of potassium, 3j.; prepared lard, 3ij.; first rub the iodine and iodide of potassium with a few drops of spirit, then mix with the lard." L. The *Unguentum Iodinei* of the Edinburgh College of Pharmacy is prepared with the same proportions of the ingredients as the London ointment. About the size of a nut of this ointment should be rubbed on the affected part twice or three times a day.

Incomp.—Acids, and acidulous and metallic salts.

Spongia officinalis, D. *The officinal Sponge.*—Sponge is a very general use in the practice of surgery. As a mechanical *burnt sponge* was used before the discovery of sulphuric acid for the treatment of bronchocele and of scrofulous affections; but, as its medicinal virtues depend on the presence of that substance, it is now completely into disuse. The following preparation is retained in the Dublin Pharmacopœia: *Pulvis Spongiæ ustæ*, D. (Cut the sponge into pieces, beat it, to free it from little stones, burn in a closed iron vessel till it becomes black and brittle, and reduce it to powder.) Dose, 3j. to 3ss., made into an electuary with ointment and honey.

Sulphuris iodidum. *Iodide of Sulphur.*

P. & C. P.—This compound is met with in brownish-red crystals of a radiated crystalline structure. It has a strong odour of iodine and an acrid taste. Its elements are easily disunited, the iodine entirely escaping when it is left exposed to the air. Its composition is SI_4.

Preparation.—Sulphur in a powdered state of iodine each in equal weight, are placed together in a glass flask and exposed to a heat not greater than 212°, the sulphur and iodine fused, and when the mixture becomes transparent the heat withdrawn. The whole is then dissolved in bisulphuret of carbon, and the solution set aside to crystallize.

Tr. F.—Iodide of sulphur is not used internally in this country, but is frequently in the form of ointment. It has been employed

cases denominated *periodical*, by which term we [illegible] at regularly recurring intervals, are [illegible] the clock at present as were the ancients, who [illegible] influence of the moon (*lunatic disease*), or to the [illegible] the tides, or to the diurnal revolutions of the [illegible] assignable physical changes which are assumed to take [illegible] the human body at critical periods, having [illegible] days, corresponding to the periodicity of [illegible]

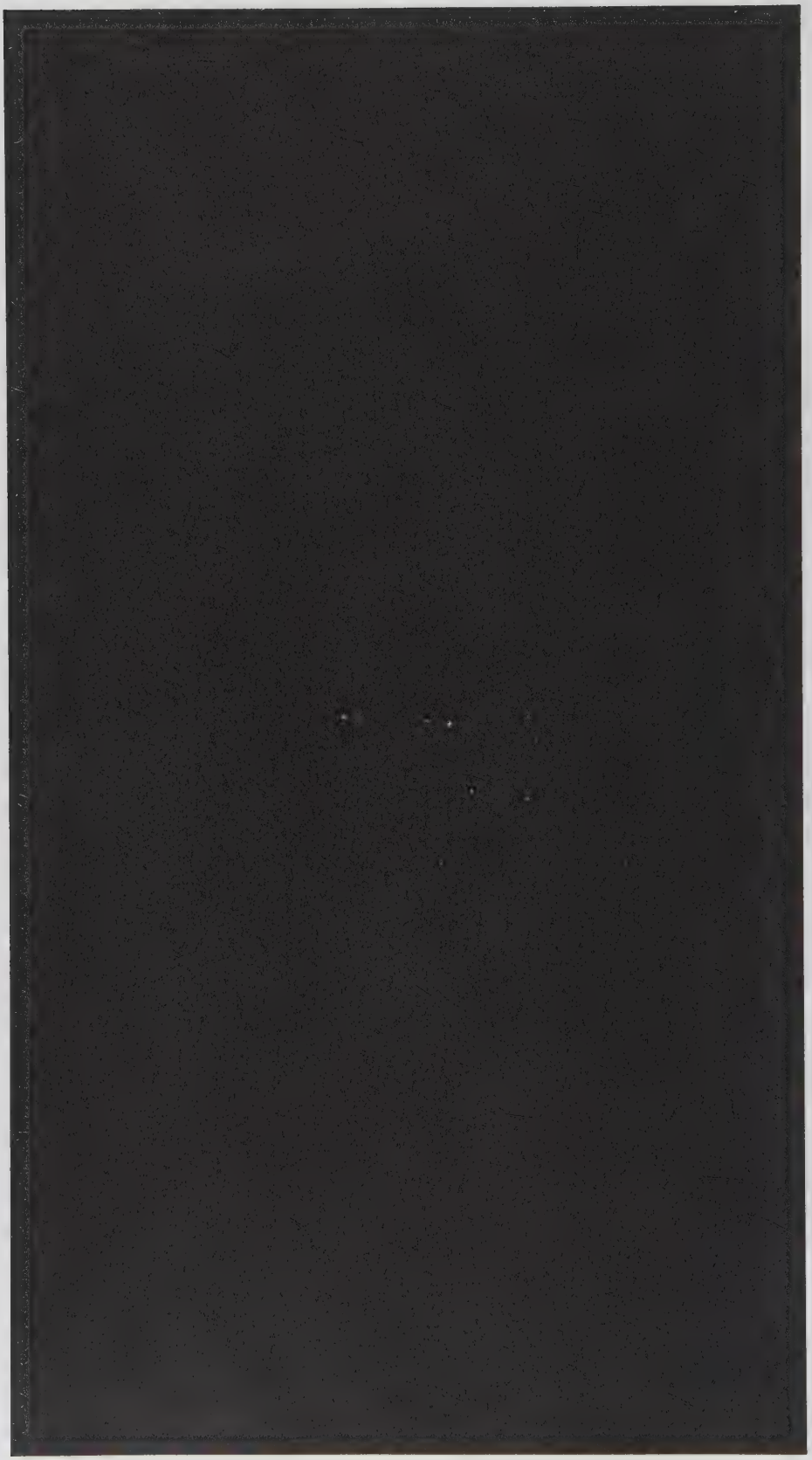
Still, however, the facts are permanently [illegible] fevers and other maladies which recur at [illegible] for an interval of hours, days, or weeks, and [illegible] more under the control of the class of [illegible] by any other treatment. And though they [illegible] spontaneously, after a longer or shorter [illegible] recur or paroxysmal character may be broken up by [illegible] these agents, even when the morbid state upon which they [illegible] may still subsist; and hence may recur in [illegible] toxicity greatly increased, and even compensated for [illegible] cessation of antiperiodics, without recurrence to the [illegible] state. Indeed, it would seem that these agents, [illegible] &c., possess no febrifuge or curative power other than to [illegible] render; and hence are in no case admissible during the [illegible] but only during the intermission or interval when the [illegible] terms are suspended. It is for this reason they are called [illegible] remedies, in contradistinction from *palliatives*, and, when [illegible] ly used, are only taken in the intervals of health, which [illegible] and happily of longer continuance than the paroxysm, in [illegible] all periodic diseases.

The opinion which, in the present state of our [illegible] best entitled to confidence is, that the action of these [illegible] rently on the nervous system, imparting [illegible] the organic functions, and thus postponing to a [illegible] period the accession of paroxysmal diseases; and that [illegible] overcoming periodicity may be attributed to the [illegible] type of diseases arises from a morbid modality of the [illegible] ing on diminished vitality, and which is best [illegible] tion, thus arrestially and even permanently [illegible]

Absinthium. L. P. Artemisia absinthium, [illegible] santa. D. *Wormwood. The leaf (Absinthii folia, P. [illegible] minthii Absinthium.*— Inodorous, belonging to the natural order *Compositæ*, and to the Linnæan class and order *Syngenesia polygamia.*

P. C.—As commonly [illegible] to 1½ feet high, erect, much [illegible] leaves alternate, petiole, segments lanceolate, acute, [illegible] panicled, globular, heads small, yellow.

P. & C. P.—The whole plant is [illegible] strong, disagreeable odour. The [illegible] bitter taste, [illegible] to be poisonous to both [illegible]



cases in which scrofula or very great debility [illegible] medicine; but which, as has been so ably shown by Dr. [illegible] Dublin, are very few in number, and frequently [illegible] its injudicious administration.

D. & M. or Aqu.—*Acidum Nitricum Dilutum*, [illegible] gtt. xxx.; L. E., tiss. to fij. It may be administered [illegible] form, as muriatic acid.

Incomp.—Alcohol; alkalies; oxides; earths; subdiacetate of lead; acetate of potash; and all carbonates and [illegible] phorets.

Acidum nitro-muriaticum, D. *Nitromuriatic acid*: *Aqua* [illegible]

Prep.—"Nitric acid, fl. ounce 1 part; muriatic acid, fl. ounces 2 [illegible] them in a glass bottle, and preserve the mixture in a well-stopped [illegible] cool, dark place."

P. & C. P.—This liquor has a deep-yellow colour, an [illegible] acid taste, and exhales an odour both of chlorine and nitrous [illegible] It is a solution of chlorine and of nitrous acid in water (Ure). Its most remarkable property is its power of dissolving the [illegible] gold and platinum, by which it may be readily distinguished [illegible] other acids.

Th. E.—This preparation was at one time much employed [illegible] orally, in the same cases as nitric acid; but at present it is [illegible] used externally, in the form of bath. Thus employed, it is a [illegible] useful remedy in chronic induration or abscess of the liver, in [illegible] in cutaneous diseases, and in syphilitic or cachectic affections. When its employment has been continued for some time, it frequently causes salivation, which is to be regarded as evincing its salutary influence.

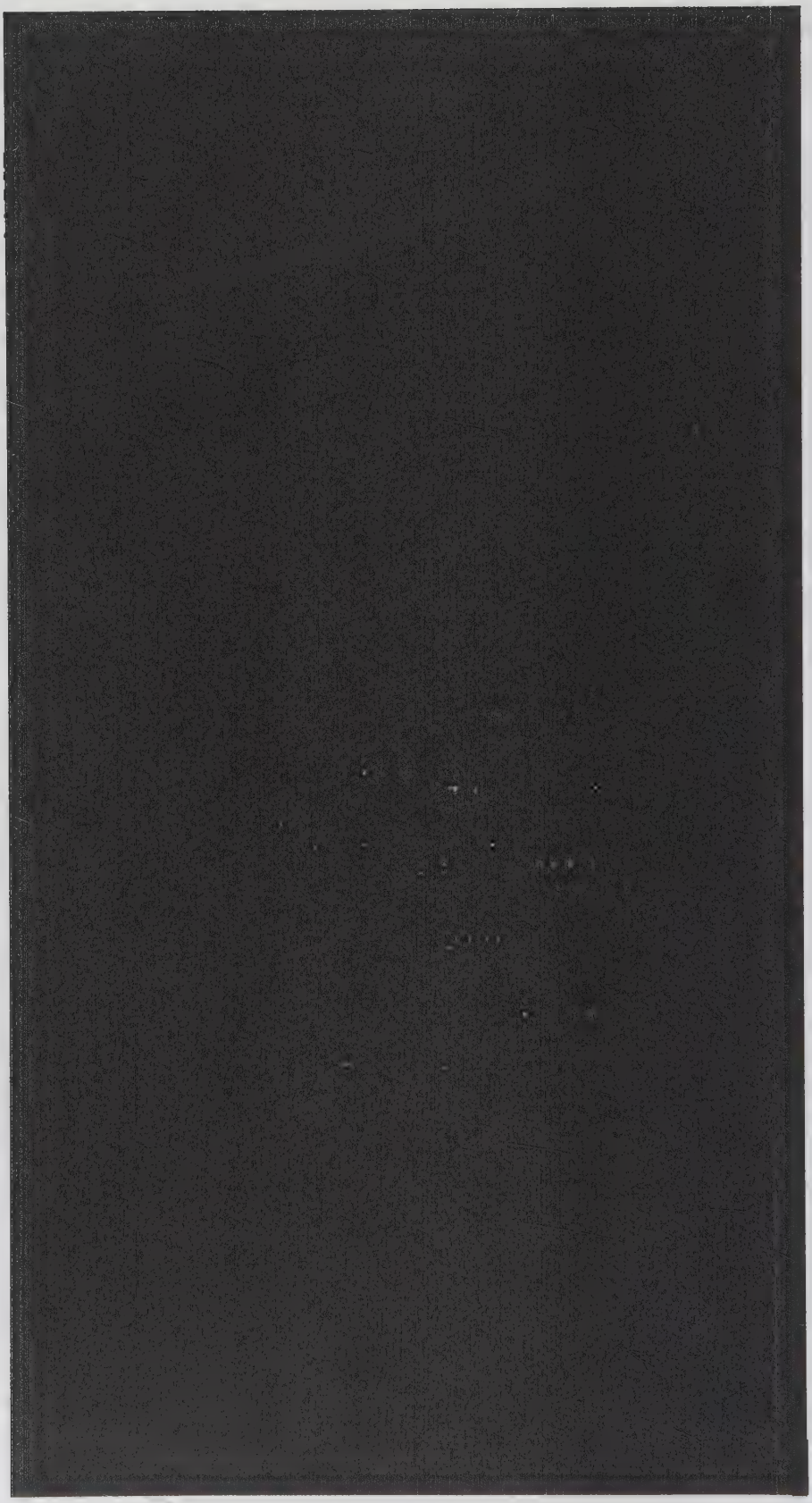
D. & M. or Aqu.—Internally, gtt. x to gtt. xx, largely [illegible] —*Balneum Acidi Nitromuriatici*. (Nitromuriatic acid [illegible] water, comp. 4j; mix in a wooden vessel.) This is to be [illegible] in the form of a hot bath; the feet should be kept in the [illegible] from 15 to 20 minutes, and afterward rubbed well with [illegible] Dr. Scott, of Bombay, affirms that this bath operates [illegible] and proclives in moderate case, when employed during the [illegible] of biliary calculi through the duct.

Acidum phosphoricum dilutum, L. *Diluted Phosphoric acid*.

P. P.—This is a colourless, inodorous [illegible] of a strongly acid taste. Its density is 1·064 at 62° F.

C. P.—It is a solution of phosphoric acid (HO, [illegible] London preparation contains 10·5 per cent. of [illegible] is the usual characteristic of a mineral acid. [illegible] gm. or minim of silver being added, whereby it is [illegible] readily dissolved by nitric acid. Sulphuric acid [illegible] not so all acted upon by it, nor is it [illegible] and [illegible] gallons of this acid, and nothing [illegible]

Prep.—[illegible]



D. & M. of Ars.—The powder to [illegible] would be from ten to fifty. —*Decoctum Cinchonæ*, from [illegible] ounce flowers, dried, ess., boiled [illegible] 5 j.; boil for a short time and strain.) Expressed [illegible] chonæ, of Pereira.—*Infusum Cinchonæ*. D. [illegible] Aromaticus, L. E. (Chamomile, 3ij; cv, L. E.) [illegible] (dentine, L.), by measure, fess. (D.), L. E.) [illegible] (red, orange, L. E.) in a covered vessel and [illegible] water, it produces vomiting. The dose of the [illegible] to fʒiss.—*Extractum Cinchonæ*. D. *Extractum* [illegible] ("Prepared as the simpler extracts." D. "Cinchona, [illegible] it with twenty of water to Ov; filter boil [illegible] pour half to the right consistence." L.) The [illegible] ted in the preparation of this extract, but it is [illegible] tonic. Dose, gr. x. to 3ss.

Infusum.—*With the infusion* the mineral acids, [illegible] iron; sulphate of copper; nitrate of silver; and [illegible]

Argenti nitras.—*Nitrate of Silver* (described in the [illegible] *Caustics*) may be administered internally in much [illegible] than might *a priori* be supposed from its caustic [illegible] plied to the surface of the body; from whence it would [illegible] be partially decomposed by the free acids of the stomach [illegible] tents, when taken in large quantity, it acts as a poison [illegible] eye person. In small but frequently repeated doses [illegible] excellent tonic, and also appears to have a specific [illegible] some convulsive disorders. As a tonic, it is one of the [illegible] can be employed in the early stages of ulcerated pulmonary [illegible] affections of the stomach, especially when there is irritability of the gastric and intestinal nerves (for it [illegible] in this frequently intractable disease we have the high [illegible] Dr. James Johnson); and in atonic pustules. The [illegible] vulsive disorders in which nitrate of silver has been [illegible] lepsy and chorea, in both of which it proves very [illegible] useful, perhaps more so than any other remedy. It [illegible] ten must, however, be persevered in for a very long [illegible] this is attended with a very serious disadvantage [illegible] has brought this remedy into great discredit, [illegible] production of an indelible and permanent [illegible] or [illegible] to the skin over the whole body. Various attempts [illegible] made to account for this phenomenon, but none of [illegible] [illegible] to my mind; it is certain that this [illegible] as frequently I have myself seen five ounces of a [illegible] disagreeable a nature, as to make this [illegible] powers.

D. & M. of Ars.—Dr. [illegible] gradually increased to [illegible] three Lotions a day, in some [illegible] [illegible] been taken. It is best [illegible] [illegible] but to the [illegible] other [illegible] [illegible] [illegible]

diseases, particularly those of a scaly character, that affect the scalp. It has been also employed in chronic rheumatism, especially when complicated with chronic disease of the joints; in passive dropsy, in syphilis, in lupus, &c.

D. & M. of Adm.—The employment of arsenic as a remedy requires great caution, and its effects must be carefully watched. It may be administered in substance in doses of from $\frac{1}{20}$ to $\frac{1}{10}$ of a grain, made into pill with crumb of bread; but, in consequence of the great difficulty of dividing accurately so small a quantity into pills, the following preparation is generally preferred: *Liquor arsenicalis*, D. E. *Liquor Potassæ Arsenitis*, L. (Arsenic, powdered (broken into small fragments), L. ss, and carbonate of potash (from tartar, D.) of each, gr. lx. (gr. lxx), L. compound spirit (tincture L. E.) of lavender, ℥v. (℥ss), L. distilled water, *by measure*, ℥xx. (℥lx., L. E.). Boil the arsenic, carbonate of potash with the water (half the water, L. E.) in a glass vessel till they are dissolved (filter, if necessary, L.); add the spirit of lavender to the cooled liquor; and then, add distilled water, till the whole measures ℔j. (Ol., L. E.). (Dr. Ure.—Take of arsenious acid, in small fragments, pure carbonate of potash, of each, *sixty-four* grs.; distilled water, ℥ss.; compound spirit of lavender, ½ oz. Boil the arsenious acid and potassa with the water in a glass vessel till the acid is entirely dissolved; add the solution, when cold, add the lavender, and afterwards pure distilled water to make it fill exactly the measure of a pint. Each fluid drachm contains gr. ss. of arsenious acid: the preparation of the Dublin College is a little weaker. Dose, in the way to ascend two or three times a day. It is incompatible in prescription with lime-water, chloride of calcium, sulphate of magnesia, sulphate of iron, alum, oxide of iron, nitrate of silver, infusion and decoction of bark, &c.—*Pilulæ Arsenicæ*. (Arsenious acid, ℈j.; black pepper, ℥ss.; liquorice root, powdered, and sugar, of each, ℥ij.; mix, and divide into 500 pills.) This combination is largely used in the East Indies as a remedy for cachexies, chronic rheumatism, and syphilitic symptoms. Each pill contains about $\frac{1}{20}$ of a grain of arsenious acid. Dose, one to two daily.

In poisoning with arsenic, if the stomach pump is at hand, it should be immediately used, and the stomach repeatedly washed out with tepid water, in which the hydrated sesquioxide is kept suspended. The mode of preparing the solvent we have just stated to be arsenic, and the manner in which it is to be used will be described hereafter. In the absence of the stomach pump, emetics of sulphate of zinc or sulphate of copper should be administered and vomiting promoted by tickling the fauces.

Arsenici oxidum, L. E. Oxide Arsenic. Arsenious acid. Arsenic. D. *Arsenic-white. Fine white powder.* D. *Pulverized white oxide of the metal of Cobalt. Pulverized white oxide of the metal of Bismuth. Pulverized white oxide of the metal of Zinc.*

Reactions wanted. D. E. Boric acid reacts. L. Chloride of Barium. *Muriate of Baryta.* *Chloride of Barium.*

T. & C. E.—The red crystalline in the gas reacts against the effect of the solvent. It is colourless and transparent, with an acrid, bitter taste. It is permanent in the atmosphere, but in very dry weather effloresces slightly. It is soluble in about twice its weight of water, and in somewhat less of boiling water; it is said to be soluble in 16 parts of alcohol. Its density is 2.91, and its equivalent 104.3 + 2 HO. Sulphuric acid and the sulphates produce a heavy white precipitate, insoluble in nitric acid, and in that of the salt.

Tr.—[illegible] of baryta, in parts, exposed to the [illegible] hydrochloric acid, and [illegible] of baryta in the [illegible] and [illegible] water. Each ounce of the [illegible] gives about [illegible] grains of [illegible] sulphate of baryta. [illegible] the [illegible] of baryta, and [illegible] [illegible] [illegible]

Ex. to fig.—*Stamnodium Colletiæ*. B. *Colletia cruciata*; part of branch with 2 pairs of leaves, enlarged by 2 diam. C. A flower, enlarged by 2 diam. D. Ditto, with the petals removed, enlarged by 2 diam. E. Ditto, with the petals and stamens removed, enlarged by 2 diam. F. Ditto, with the petals, stamens, and upper part of the calyx removed, enlarged by 2 diam. G. Ditto, with the petals, stamens, and calyx removed, enlarged by 2 diam. H. Ditto, with the petals, stamens, calyx, and upper part of the ovarium removed, enlarged by 2 diam. I. Ditto, with the petals, stamens, calyx, and ovarium removed, enlarged by 2 diam. K. Ditto, with the petals, stamens, calyx, ovarium, and upper part of the style removed, enlarged by 2 diam. L. Ditto, with the petals, stamens, calyx, ovarium, and style removed, enlarged by 2 diam. M. Ditto, with the petals, stamens, calyx, ovarium, style, and upper part of the receptacle removed, enlarged by 2 diam. N. Ditto, with the petals, stamens, calyx, ovarium, style, and receptacle removed, enlarged by 2 diam. O. Ditto, with the petals, stamens, calyx, ovarium, style, receptacle, and upper part of the nectary removed, enlarged by 2 diam. P. Ditto, with the petals, stamens, calyx, ovarium, style, receptacle, and nectary removed, enlarged by 2 diam. Q. Ditto, with the petals, stamens, calyx, ovarium, style, receptacle, nectary, and upper part of the stamnodium removed, enlarged by 2 diam. R. Ditto, with the petals, stamens, calyx, ovarium, style, receptacle, nectary, and stamnodium removed, enlarged by 2 diam. S. Ditto, with the petals, stamens, calyx, ovarium, style, receptacle, nectary, stamnodium, and upper part of the ovarium removed, enlarged by 2 diam. T. Ditto, with the petals, stamens, calyx, ovarium, style, receptacle, nectary, stamnodium, and ovarium removed, enlarged by 2 diam. U. Ditto, with the petals, stamens, calyx, ovarium, style, receptacle, nectary, stamnodium, ovarium, and upper part of the seed removed, enlarged by 2 diam. V. Ditto, with the petals, stamens, calyx, ovarium, style, receptacle, nectary, stamnodium, ovarium, and seed removed, enlarged by 2 diam. W. Ditto, with the petals, stamens, calyx, ovarium, style, receptacle, nectary, stamnodium, ovarium, seed, and upper part of the embryo removed, enlarged by 2 diam. X. Ditto, with the petals, stamens, calyx, ovarium, style, receptacle, nectary, stamnodium, ovarium, seed, and embryo removed, enlarged by 2 diam. Y. Ditto, with the petals, stamens, calyx, ovarium, style, receptacle, nectary, stamnodium, ovarium, seed, and embryo removed, enlarged by 2 diam. Z. Ditto, with the petals, stamens, calyx, ovarium, style, receptacle, nectary, stamnodium, ovarium, seed, and embryo removed, enlarged by 2 diam.

Synonyms.—Thicket of indian ; jalousie ; all over ; [illegible] of land.

Cornish. L. E. *Cornish iron, covering*. D.—*Cornish Rock of Cornish Alloy*.—A mixture of the West India [illegible] of South America, belonging to the order of [illegible] the Linnean class and order *Dodecandria Monogynia*.

B. C.—A [illegible] ; [illegible] ; [illegible] ;

[illegible] a bitter principle and a [illegible] matter (fat, [illegible] a peculiar [illegible] matter, with [illegible] and [illegible]. By [illegible] it is not clear whether the bitter principle is [illegible] but the water becomes a brownish colour. By boiling it with [illegible] and then [illegible] with [illegible] a [illegible] jelly.

U. E.—[illegible] is also [illegible] bitter tonic and as it is also [illegible] it proves an excellent [illegible] in [illegible] diseases of debility and in [illegible] where [illegible] exists. It is used also as an [illegible] and in this [illegible] a [illegible] previously removed by [illegible] is [illegible] with [illegible] water 200 parts, and [illegible] of potash 1 part; but when its acrid powers are required the bitter principle should not be removed, as is frequently the [illegible] this [illegible] is only as a substitute for [illegible]

L. & M. [illegible]—*Decoction* [illegible] *Lichen's Infusion*. D. *Decoction* [illegible] [illegible] by macerating [illegible] then [illegible] D. [illegible] Boil [illegible]—*Chiretta*. (Ice-land [illegible] powdered [illegible] ounce, [illegible] pint of rectified spirit [illegible] the greater part of the spirit [illegible] which is [illegible] by [illegible] dissolving in [illegible] gr. ij. to [illegible] Small [illegible] divided doses [illegible]

Infusum.—[illegible] the [illegible] of [illegible] the sequents of [illegible]

Chiretta. E. *Chiretta* or *Chirayta*. *The herb and root of Agrostis Chiretta*.—A native of the northern parts of the Continent of India, belonging to the natural family *Gentianaceæ*, and to the Linnæan class and order *Pentandria Monogynia*.

E. P.—A [illegible] annual [illegible] about 3 feet high; leaves [illegible] yellow [illegible] stalked, in [illegible]

P. P.—A [illegible] with in the shops, chiretta consists of the root, stem, and [illegible] The stems are round and smooth, about the thickness of a writing pen, with a shining brown epidermis, and a yellow, spongy pith. The whole plant has a purely bitter taste, without any astringency.

C. P.—Chiretta is composed of resin, yellow bitter matter, brown colouring matter, gum, malic acid, salts of potash and lime, and traces of oxyde of iron (Lassaigne and Boissel). It yields its bitterness to water and to alcohol.

Th. E.—Chiretta is a powerful bitter tonic, bearing much re-

Much confusion still exists as to the botanical [illegible] cinchona barks, and the terms pseudo-[illegible] the botanical references of the Dublin and [illegible] altogether erroneous. The genus Cinchona [illegible] and red barks of the pharmacopœias are [illegible] been determined; but crown bark [illegible] chiefly the produce of *Cinchona Condaminea* [illegible] of *Cinchona Micrantha*. All the cinchonas [illegible] the Andes, growing at different elevations from [illegible] above the level of the sea, and in the region extending [illegible] latitude to 20° S. latitude. They belong to the natural [illegible] *cinchoneæ*, and to the Linnæan class and order *Pentandria* [illegible] *gynia*.

[illegible]

P. P.—It would be quite foreign to the scope of this [illegible] ter into any detailed account of the numerous [illegible] bark which are occasionally met with in commerce. I shall describe those which most frequently occur, and which are generally used for medical purposes; and in so doing I shall follow the classification of the Dublin College, more especially as it is in general followed by the English drug trade: namely, *Yellow* and *Pale Cinchona barks*.

1st. Yellow Bark, *Cinchona flava*.—The tree producing this bark, the *Cinchona cordifolia* of Vah Bergius, has not been [illegible] as yet unknown. It is met with in two varieties, [illegible] The *quills* are generally from 9 to 18 inches long, [illegible] to two inches in diameter, and from one to two lines in [illegible] thickness. They are in general singly quilled, and [illegible] very rough, light-grey epidermis; externally they are [illegible] longitudinal wrinkles, and traversed with [illegible] extending completely round the quills, and [illegible] interval between the rings is usually of a [illegible] and of a cinnamon-brown colour. The [illegible] is in very long, fibrous tufts, and [illegible] this bark. They are in general [illegible] what pungent, it is similar to that of the [illegible] a cinnamon-brown [illegible]

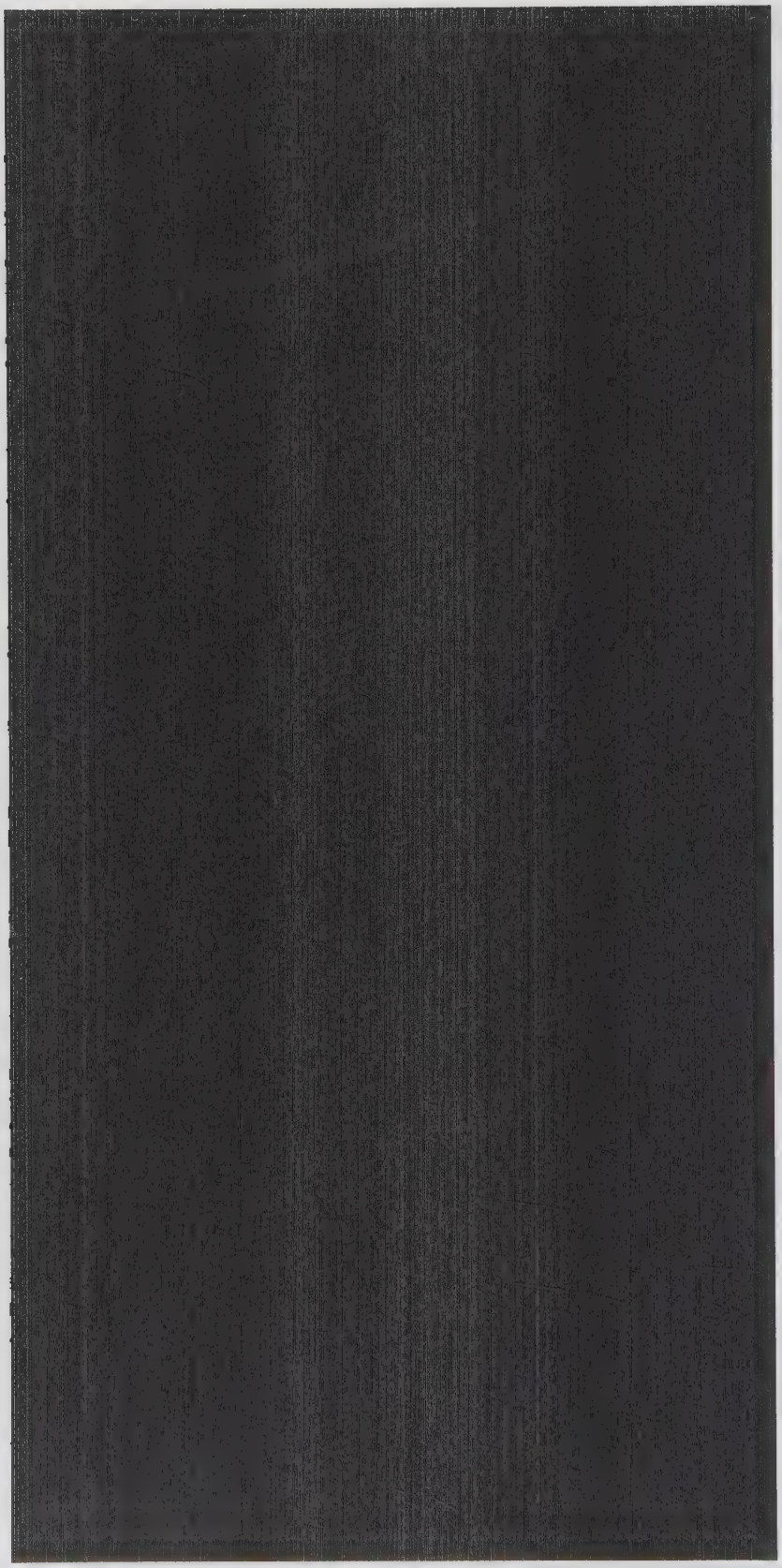
[illegible] of Peruvian bark or of cinchonia. The so-called *false cinchona* bark will be found described under the head of adulterations.

Of the [illegible] in the analysis of vegetable substances, particular [illegible] the active principle of Peruvian bark appears to consist of two peculiar alkalies, to which the name of cinchonine is given, in combination with a peculiar kind of [illegible] acid, together with a variety of [illegible] principles, namely, red and yellow cinchonic [illegible], yellow fatty matter, [illegible] of lime, gum, ligneous [illegible], and a trace of [illegible]. The proportion of these ingredients, particularly the alkalies, differs considerably in the various kinds of bark. The pale [illegible] bark, cinchonia is [illegible] bark, while that of the [illegible] is nearly equal proportions of the two. The [illegible] properties of bark depend principally on the alkalies. Of these the cinchonia is the most active; it is officinal in the London Pharmacopœia, but no process is given for its preparation, as it is [illegible] in medicine. A salt of quina, however, the [illegible], is [illegible] as a substitute for cinchona bark; it is [illegible] in the latest British Pharmacopœias, and is prepared as follows:

[illegible] Take of [illegible] powder, [illegible] distilled water [illegible] Mix and digest together for [illegible] with frequent agitation, then strain, [illegible] the residuum with a fresh quantity of water, and strain, again the process a third time. Add to the mixed liquor [illegible] and agitate the mixture for a few minutes. Separate the precipitate by the aid of a paper filter, and wash it [illegible] with distilled water. Dry the precipitate with a gentle heat, and [illegible] it in a glass mortar with [illegible] of rectified spirit [illegible] Digest the [illegible] spontaneously [illegible] and by degrees add [illegible] Filter the solution and [illegible] the spirit by distillation and [illegible] Dissolve the [illegible] in [illegible] of sulphuric acid, [illegible] of ammonia, and [illegible] of distilled water [illegible] in the same manner [illegible] in the same proportions, for an [illegible] water for [illegible] distilled water. [illegible] Pour [illegible] with distilled water. Boil the [illegible] of animal charcoal with [illegible] of distilled water and [illegible] of sulphuric acid, and solution of ammonia [illegible] What the latter is [illegible] perceptible. Let what remains be [illegible] with the rest of the sulphuric acid diluted. Afterward digest with [illegible] and strain. Lastly, the charcoal being thoroughly washed [illegible] the liquor is [illegible] that crystals may be produced.

—Quina. Take [illegible] powder, [illegible] carbonate of soda, [illegible] Boil the [illegible] in [illegible] for an hour in [illegible] of water [illegible] the carbonate of soda has been dissolved; strain and express all [illegible] Boil the residuum with water and express again [illegible] Boil the residuum for half an hour with Oiv. of water and [illegible] strain, express strongly, macerate with water, and express again. Boil the residuum with Oiij. of water, and a fourth part of the acid; strain and express as before. Boil again the residuum with the same quantity of water and acid, strain and express as formerly. Concentrate the whole acid liquids to about a pint; let the product cool, filter it, and dissolve in it the remainder of the carbonate of soda. Collect the impure quina on a cloth, wash it slightly, and squeeze out the liquor with the hand. Break down the moist precipitate in Oij. of distilled water, add nearly fʒj. of sulphuric acid, heat it to 212°, and stir occasionally. Should any precipitate retain its gray colour, and the liquid be [illegible], add sulphuric acid drop by drop, stirring constantly till the gray colour dis-

[illegible] —The tannic forms that are produced with albumen [illegible] the [illegible] of the precipitate [illegible] the addition of [illegible] with good tools; but the [illegible] of the [illegible] tannic acids [illegible] the two [illegible]. If the [illegible] have been [illegible] [illegible] [illegible]



[redacted]

[redacted]

[redacted]

and a green powder falls. It is soluble in water, and the solution has an alkaline reaction.

Test.—Add Lead Salts to a dilute solution of copper. A green precipitate (Cuprum) is formed. [illegible]

Tr. F.—Ammoniated solution of copper is employed [illegible] as a tonic, and, in consequence of its power of [illegible] an antispasmodic. It has been particularly used in [illegible] of epilepsy, chorea, and other spasmodic affections, and [illegible] ly productive of great benefit when these diseases [illegible] tional constitutions about the period of puberty, [illegible] with organic lesions.

D & M.—Ammoniated copper, gradually increased to [illegible] or three times daily, is easy to give in the form of [illegible] bread crumb or with a mixture of roses.—*Powder Copper Compound*, U. S. (Ammoniated copper, in fine powder, 1 part; [illegible] 8 parts; solution of carbonate of ammonia, 1 fl. [illegible] pestle mass, and divide it into pills, each containing [illegible] ammoniated copper.) *Cupri Ammoniati Aqua*, U. S. (*Ammoniated Solution of Copper*, L. (Ammoniated copper, 1 part; [illegible] distilled water, ten parts (Or., L. L.). Dissolve the salt in the water, and filter.) Used as a test for [illegible]

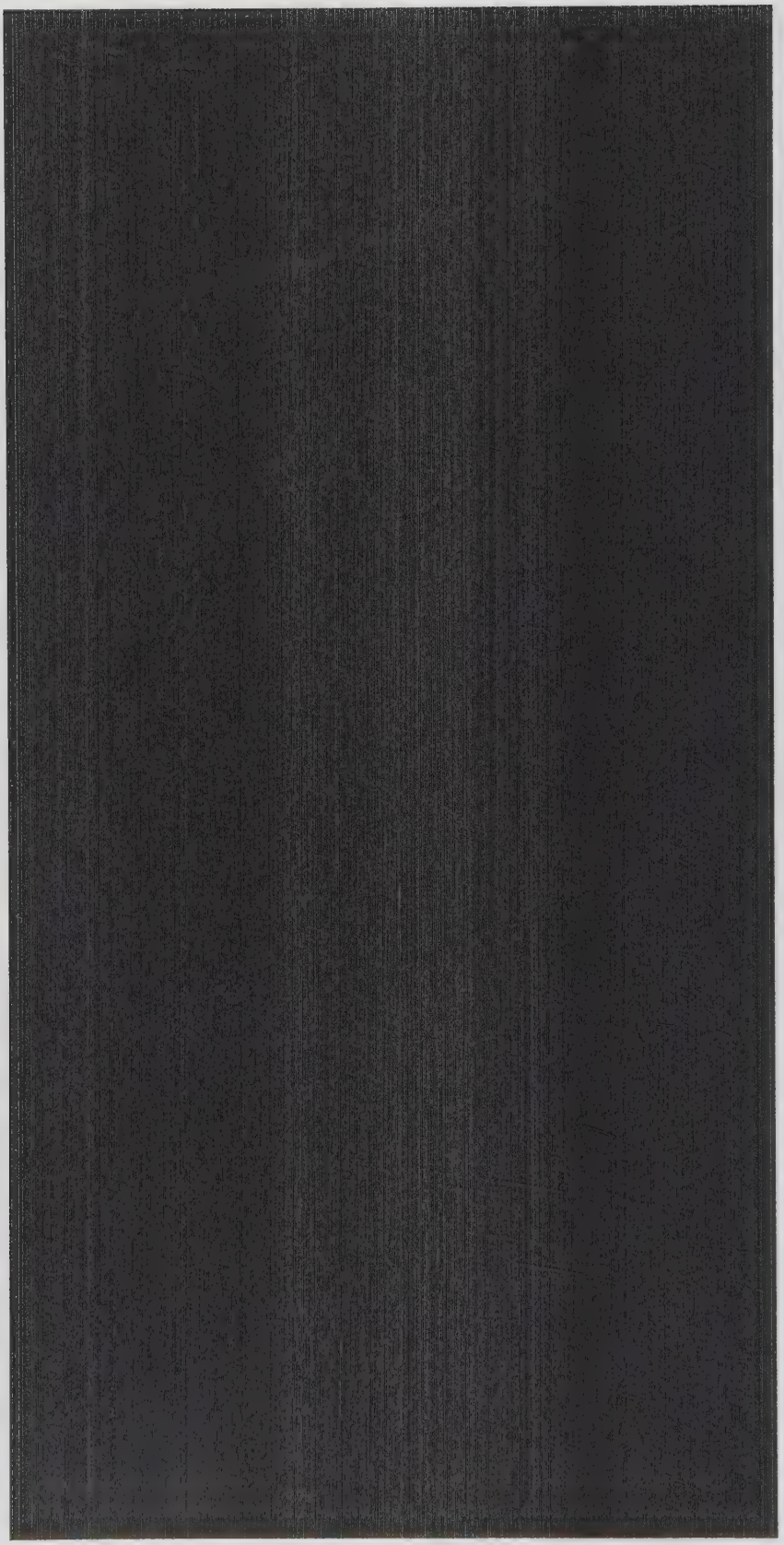
Incomp.—Acids; potash; soda; and lime-water.

In poisoning with this salt the best [illegible] is the same as in poisoning with sulphate of copper (see page 64).

Cupri sulphas.—*Sulphate of Copper* (*Blue Vitriol*; *Roman Vitriol*; *Astringent*) has been employed as a tonic in chronic [illegible] but the ammoniated copper is more generally [illegible] these diseases. For dose and mode of administration, [illegible]

Cupraria, L. E. Aeruginis, D. *Carpenter's Rust*; *Verdigris*; and *Black of Cupreous Chemicles*, E.—*Cupri Subacetas*, U. S.—*Cupri diacetas trihydratus*, D.—The [illegible] is produced [illegible] species of *Goliath* and *Cornel* [illegible]. They are natives of the warmer regions of South America and belong to the [illegible] ly *Rutaceæ*, and to the Decandria class and order [illegible] ground.

P. P.—Copper [illegible] in pieces from [illegible] length, some nearly [illegible] rather irregularly [illegible] easily with a gravish-yellow, soft [illegible] apparently with a coarse [illegible] [illegible]



Incomp.—The sesquisalts of iron; nitrate of silver; [illegible] of lead.

Dennis arborea, Forst. D. *Wooden Rock.* [illegible] *arborea*.—A native of the coast of Coromandel on the island of Maygdiva. It belongs to the natural family [illegible] the Linnæan class and order *Polyandria Trigynia*.

B. C.—A large tree, about 40 feet high, [illegible] pinnate, [illegible] and smooth on the under surface; [illegible] of 2 or 3 on a common footstalk.

P. & C. P.—This bark is at present rather scarce, and but little employed; it occurs in rolled quills from one inch to one inch and a half long, and from half an inch to two inches in diameter, smooth externally, of a reddish-yellow colour, with [illegible]. It has an aromatic odour, and an agreeable, somewhat spicy taste. Its properties depend on volatile oil and resin in the [illegible] tannin.

Th. E.—Wayper's bark is an excellent aromatic tonic, agreeing in many respects to cascilla bark, which is now generally substituted for it. It is so seldom used that there are no opportunities of it contained in any of the British or Continental Pharmacopœias. The dose of the powder is from [illegible].

Fel bovinum. *Ox-gall.*

Ox gall, although at one time much employed in medicine, has completely into disuse until within the last few years, when it has been again brought under the notice of the profession as an excellent tonic in various forms of dyspepsia. I have myself used it extensively, and can speak most highly of its excellent properties, particularly in that morbid irritability of the stomach attended with vomiting soon after the meals have been taken, provided there is no organic disease present: it also appears to act as a gentle laxative. The following is the preparation which I have employed: *Pel Bovinum Inspissatum.* (Ox gall, evaporated [illegible] with an equal quantity of distilled water, set aside for 12 hours, and the supernatant solution pour off the clear liquor, boil and strain through linen or calico. Lastly, evaporate it to a watery [illegible] consistence of an extract.) This prepared, it is said, has the advantage of intensely bitter taste, leaving a sensation [illegible] the tongue and palate; the dose of it is from [illegible] three times a day.

Ferrum. Iron. Ferrum redactum et limatum, E. Iron [illegible] or iron filings. D. *Iron filings.* I. *Iron in the form of powder and in the form of filings.* E. *Iron, [illegible], and reduced to powder.* D.—Iron is met with in the mineral state in [illegible] America; but it is usually found combined with other substances, in the state of oxyde, sulphuret, carbonate, &c.

Iron.—Wrought iron is in general of the [illegible] in the form of [illegible]. The most generally [illegible] from the [illegible]

[illegible] metallic iron is of a [illegible] white colour, [illegible] highly lustrous, [illegible] fusible, particularly when heated [illegible] gaining or losing [illegible] colour when rubbed. At [illegible] before it arrives at the point of fusion, it [illegible] state possesses the remarkable property of [illegible] attracted by the magnet, and becomes itself [illegible] tion, but, if pure, immediately loses its polarity [illegible] from the magnet. Its sp. gr. is 7·8, and its [illegible]

[illegible] like other metals, does not exert any influence [illegible] while it retains the metallic state; but, as it is [illegible] and converted into salts, this change [illegible] stomach soon after it is swallowed, and then the effects [illegible] produced. Iron filings were at one time much used [illegible] in the present day they are never employed in [illegible] The dose of them was from gr. x. to 3ss., administered [illegible] form of electuary or bolus made with treacle or honey. [illegible] The effects of the ferruginous preparations, when they [illegible] are continued for some time, are tonic and astringent; [illegible] if they have been given in too large doses or their use per[illegible] for too long a period, they produce a state of over excitement [illegible] characterized by a feeling of determination of blood to the [illegible] head, fulness, and by other uneasy sensations. The morbid [illegible] state of the system in which the preparations of iron are found [illegible] useful is that which has been denominated *anæmia*, in which [illegible] the blood is deficient, in respect both of its quantity and of the relative [illegible] number of red particles. The diseases in which they have been [illegible] found useful are chiefly those of debility accompanied with or [illegible] dependent on *anæmia*, as in chlorosis, amenorrhœa, menorrhagia, [illegible] diseases of the urinary organs, scrofulous affections, passive hemorrhages, [illegible] chronic diseases of the digestive organs, neuralgia, &c. [illegible] They have also been used with benefit in diseases of an intermittent [illegible] or remittent type, in dropsical affections, in chronic enlargement [illegible] of the liver or spleen, in cancer, &c. The employment of [illegible] these preparations is contra-indicated where there is any [illegible] tendency to inflammation or active hemorrhage in the system, [illegible] great irritability of the digestive organs, in persons of a [illegible] plethoric habit of body, and in those prone to a determination of blood [illegible] to the head.

[illegible] D. *Solution of the acetate of iron.*

[illegible] D.—A liquid of a dark blood-red colour, with an acetic [illegible] odour, strongly acid, chalybeate taste. It is a solution of [illegible] peroxide of iron (Fe^2O^3) in acetic acid.

[illegible] "Carbonate of iron, 1 part; acetic acid, 6 parts; digest for 6 days, [illegible] ... ACETATUS FERROSUS, D. "Acetate of potash, 2 parts; solution of [illegible] sulphate of iron, 36 parts; rub the acetate of potash and sulphate of iron [illegible] gradually together till they unite into a mass, then dry them with

[illegible] is an excellent preparation of iron, void of astringency. It is peculiarly suited as a tonic for those derangements of the digestive organs in which the ferruginous salts are indicated. Its agreeable taste, its solubility in water, and the permanency of its composition, give it an advantage over most of the other preparations of iron.

Dose.—Gr. v. to gr. viij., in the form of powder, pill, or made into a bolus with honey.

The mineral acids, and all astringent vegetable infusions, [illegible]

[illegible]. *Bromide of Iron.*

[illegible] and clean iron filings, of each, equal parts; heat together until the fluid becomes of a greenish colour; filter and evaporate to dryness.

The bromide of iron is of a brick-red colour, and has a disagreeable, metallic taste. It deliquesces rapidly when exposed to the air, and is very soluble in water. It has been used on the Continent, combined with much success, in hypertrophy of the uterus, and glandular enlargements. Dose, gr. iij. to gr. viij.—*Pilulæ Bromidi Ferri*, Wenzeck. (Bromide of iron, 3i.; extract of liquorice, 3ij.; and divide into 60 pills.) One or two, morning and evening.

CARBONAS SACCHARATUM, E. *Saccharine Carbonate of Iron.*

A grayish or bluish-green powder; inodorous, with a strongly chalybeate taste.

This preparation is composed of "carbonate of protoxyde of iron in an undetermined state of combination with sugar and oxide of iron," *Ed. Phar.* Sugar or other saccharine matter [illegible] the decomposition of the carbonate of the protoxyde of iron, which always takes place rapidly from the conversion of the protoxyde into the sesquioxyde and the escape of carbonic acid. The saccharine carbonate remains unchanged for a long time exposed to the air. It is insoluble in water or alcohol; but dissolves completely in muriatic acid, with effervescence.

[illegible] "Sulphate of iron, ʒiv.; carbonate of soda, ʒv.; pure sugar, ℔ij.; dissolve the sulphate and carbonate each in Oij. of the water; add the

[illegible]

Adulterations.—This preparation is not liable to adulteration; that is, has been properly prepared may be known by [illegible] being gravel-green, and by its being easily soluble in [illegible] cold, with brisk effervescence." *Edin. Pha.*

Th. E.—Characters of the protoxyde of iron [illegible] and most active of the ferruginous salts, and its [illegible] its composition in the form now described renders it [illegible] a valuable substance to the Materia Medica. It is [illegible] ial for children and delicate females when the [illegible] chalybeate tonic is indicated. Carbonate of iron [illegible] by an excess of carbonic acid is the active principle [illegible] cula several waters.

D. & M. or Aqua.—Gr. x to gr. xxx—in [illegible] made into an electuary with sugar or honey.—*Pilulæ [illegible] bonatis*, E. (Saccharine carbonate of iron, 4 parts; [illegible] serve, 1 part: beat them into a proper mass, to be [illegible] five-grain pills.) Dose, 1 to 4 pills. In the following [illegible] the carbonate of iron prevented from undergoing [illegible] by the presence of saccharine matter, in the action [illegible] *Mistura Ferri composita*, D. L. E. (Myrrh, powdered, [illegible] E.); carbonate of potash, gr. xxv. (Ed. L. E.); [illegible] (℥xviij, L. E.); sulphate of iron, powdered, ℥j. (Dub. L. E.); spirit of nutmeg, ʒss. (Ed. L. E.); pure sugar, ℥ij. (Ed. L. E.)—rub together the myrrh with the spirit of nutmeg and the carbonate of potash, and to these, while rubbing, add first the rose-water and the sugar, then the sulphate of iron. Put the mixture [illegible] into a proper close vessel, and stop it.) This mixture, which was introduced into the pharmacopœias as a substitute for the [illegible] *Tonic Mixture*, and by which name it is still commonly known, is one of the best and most generally employed of the pharmaceutic preparations of iron. Its operation is prompt as well as [illegible] and, consequently, it should not be administered in cases where there is any tendency to inflammatory action in the digestive organs. The dose is ℥ij. or ℥iij., two or three times a day. As it does not keep well, it should be only prepared when wanted for use. *Pilulæ Ferri compositæ*, D. L. (Myrrh, powdered, [illegible] soda, sulphate of iron, and rose water (troche, L.), of each [illegible] rub the myrrh with the carbonate of soda, then add the sulphate of iron (and the sugar, D.), and make into a mass with [illegible] them again; afterward beat the whole to a proper consistence, and incorporate.) Dose, gr. x to gr. xx. (or ʒss. to ʒj.) two or three times a day. These pills become so hard when kept that they are unfit for use.

Incomp.—Acids and acidulous salts, and all astringent vegetable preparations.

Off. prep. *Carbonate of Iron.*

U. S. P.] *Peroxyuride of Iron. Permanent Blue.*—This substance was introduced into the Materia Medica of the London and Edinburgh Pharmacopœias which are being employed for preparing the salt if necessary. It has, however, been employed in America as a pigment of considerable and valuable power, and to dyeing for which it is stated to have proved a very effectual remedy. It has also been employed in Germany with success in some cases of chlorosis or epilepsy. But according to more recent observations it appears to possess very little, if any, therapeutical powers. The dose in which it has been administered is from gr. iii. to gr. x. three or four times a day.

[U. S. P.—*Ferrocyanuret of Iron.* Take of sulphate of iron 2 oz.; sulphuric acid, 1½ fluid drachms; nitric acid, 6 fluid drachms; solution of ferrocyanuret of potassium, 4½ oz.; water, 2 pints. Dissolve the sulphate of iron in a pint of the water, and having added the sulphuric acid, heat the solution. Pour into it the nitric acid, a small portion, boiling the liquid for a minute or two after each addition, until it no longer produces a dark colour; then allow the liquid to cool. Dissolve the ferrocyanuret of potassium in the remainder of the water, and add this solution gradually to the first liquid, agitating the mixture after each addition; then pour it upon a filter. Wash the precipitate with boiling water until the washings pass tasteless. Lastly, dry it and rub it into powder.]

Ferri iodidum, L. E. *Iodide of Iron. Protoiodide of Iron.*

P. P.—Generally met with in small crystalline masses, of an iron grey colour, opaque, and having a metallic lustre. It has a very styptic, metallic taste.

C. P.—Iodide of iron is composed 1 eq. of iodine and 1 eq. iron (FeI), combined in the crystalline state with 5 eq. of water. It is very deliquescent, and attracting oxygen from the air, is converted into a mixture of peroxyde and periodide of iron; it dissolves readily in water and alcohol, but the solution, when left exposed to the air, is rapidly decomposed, and peroxyde of iron deposited. Exposed to heat it fuses, and at a temperature above 300° F. is decomposed, the iodine being volatilized, and the iron left in the state of peroxyde.

Prep.—*Iodid.* ℥iv., iron filings, ℥ij., distilled water, Oxvj.; mix the iodine with Oxij. of the water, and to these add the iron. Heat them in a flask and when it has acquired a greenish colour, pour off the liquor. Wash what remains with the half pint of water, boiling. Let the mixed and strained liquors evaporate at a heat not exceeding 212° in an iron vessel, that the salt may be dried. Keep it in a well-stopped vessel, access of light being prevented.—*Ferri Iodidum.* Take an equivalent quantity of iodine, iron-wire, and distilled water, as the preceding for making each of iodide of iron (*see below*). Proceed as directed for the preparation of iodide of iron, adding the iodine gradually in small portions at a time, and preserving the crystals of iodide of iron that are formed. Put the filtered liquor quickly into an evaporating basin, with twelve times its weight of quicklime, cover the basin by means of a convenient apparatus by which it may be shut up accurately in a small space, but communicating with the general atmosphere. Heat the whole apparatus in a hot air pump, or otherwise, until the water be entirely evaporated, and preserve the dry residue in small well-closed bottles.—*Ferri iodidum cum sulphure.* L. Iodine [iv.], sublimed flowers of sulphur, powdered, each one ounce, fine iron-wire, recently cleaned, 100 grains, white sugar, in powder, three [ounces].

scarcely observed, may be readily shown if it is being carbonic acid in diluted water.

The Iodide of Iron was first employed in the practice of medicine by Dr. A. T. Thomson, of London. In its operation on the system it is more nearly allied to the preparations of iron than to those of iodine, but to a certain extent it possesses the combined properties of both. Thus, it is a tonic it has been found exceedingly useful in scrofulous debility, and under its use strumous enlargements of the glandular system have been dissipated. It has been also administered with much benefit in chlorosis and amenorrhœa when the hæmagogue preparations are indicated, and in the secondary or pustular affections occurring in debilitated and scrofulous subjects. In large doses, iodide of iron sometimes purges.

D. & M. or Ann.—The dose of iodide of iron is gr. j. to gr. v. gradually increased. It is so deliquescent a substance, and the solution of it becomes so readily, that many methods have been proposed for preserving it unchanged in the form of solution: of these the only two that deserve notice are, keeping in the bottle in which it is contained a piece of iron wire, as first proposed by Mr. Squire, of London, or forming it into a strong syrup, as recommended by Dr. A. T. Thomson. The former method has been found very effectual, but it entails the necessity of filtering the solution every time it is to be used: while in the latter it is not only preserved for a length of time unaltered, but it is also an elegant form for the administration of the medicine. The syrup of the Edinburgh Pharmacopœia may be given in doses of from min. xv. to [illegible]

[illegible] with carbonate of iron. (See page 98.)

Iodate of Iron. Phosphate of Iron.

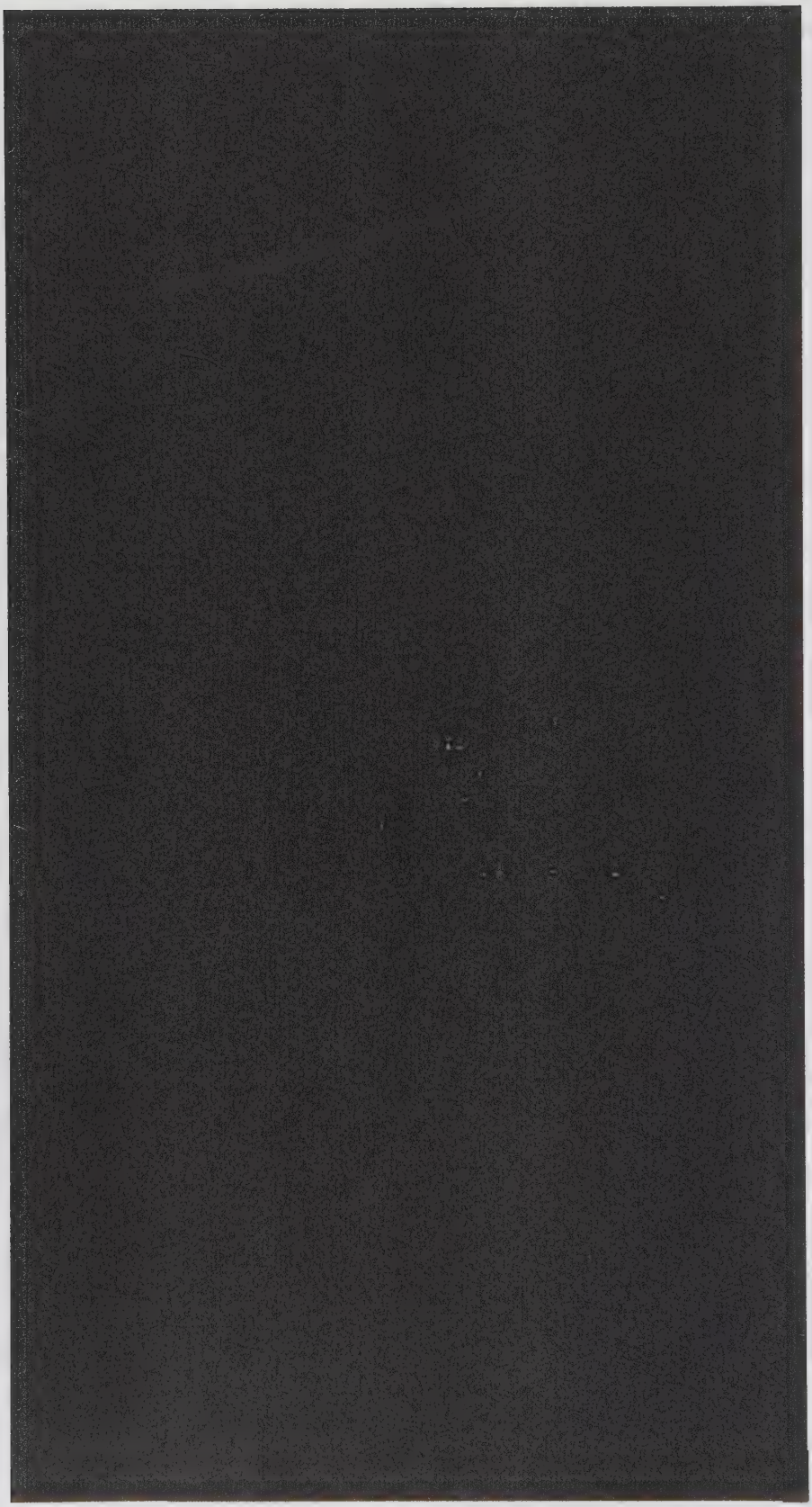
[illegible] granular powder, insoluble in water, but soluble in dilute acids, forming a feeble, [illegible]

[illegible] of 1 oz. of protosulphate of iron and 1 of iodic acid crystals in 10 oz. of water, and stir well. The iron passes to a higher state of oxydation. *Protophosphate of iron* has an acid reaction, and [illegible]

[illegible] to a third or a fourth of its volume, filter and saturate with iron filings. Separate the precipitated excess of iron by a filter. Treat it with a solution of iodine to precipitate the excess of iron. Add to the clear liquor [illegible] and evaporate to the consistence of a syrup, and preserve by keeping. [illegible]

Dr. E. Lactate of iron has been administered in the same cases as the other mild preparations of this metal. It has been principally employed in the treatment of chlorosis and atonic amenorrhœa, in which it has been found very successful.

D. & M. or Ann.—Gr. vj. to gr. xij. in the 24 hours. It is best given in the form of lozenge or of syrup.—*Trochisci Ferri Lactatis,*



[illegible] a mild astringent from the kidneys and bladder, and it retains the property of preventing the introduction of a catheter in the same manner as opium. Its medical effects are generally observed in the mouth which it irritates, and, consequently, it is administered in small but frequently-repeated doses, min. x to [illegible] minims.

L. [illegible] Acid.—Mr. x to this gradually increased to fʒj or fʒij. It is best administered in fʒj. of fʒij. of water, or in white wine, [illegible] using within the use of the latter.

Ant. C.—The tartrate and citrate of antimony: lime-water: compound of iron: sulphuret and its tartrate: solution of gum; and all astringent vegetable preparations.

In this case with the preparations, the treatment is the same as in poisoning with tartaric acid. See page 130.

Ferri oxydum nigrum, D. E. *Black oxyde of Iron. Ferrous-ferric oxyde of Iron.*

D. P.—This preparation is met with rarely, when it constitutes magnetic iron ore. Prepared according to the Edinburgh Pharmacopœia, it is a grey-coloured powder, with a velvety smoothness; the Dublin preparation is of a richer black colour. Both are strongly magnetic.

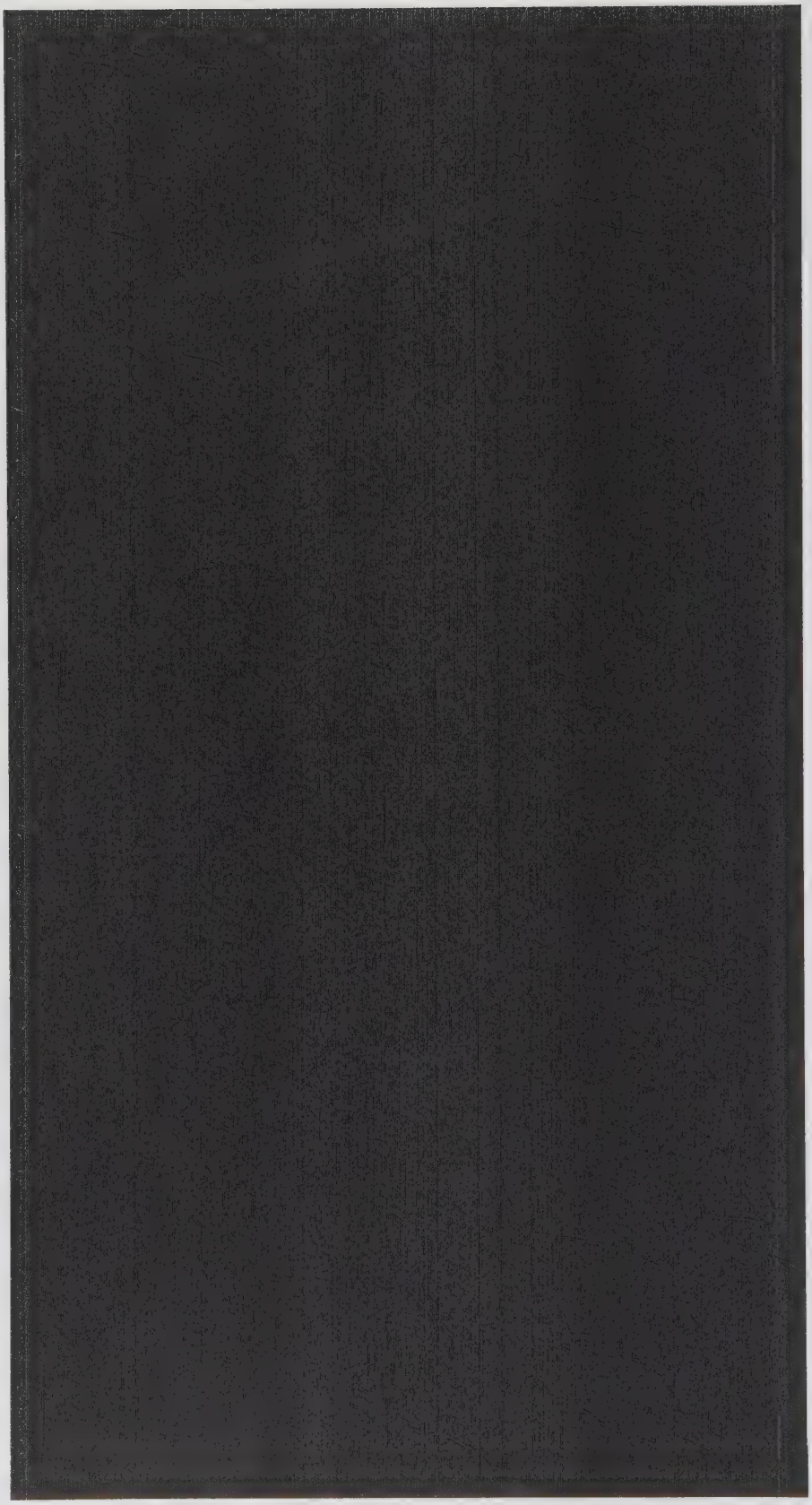
C. P.—The oxyde of the Edinburgh College is a compound of 1 eq. of the protoxyde and 3 of the peroxyde of iron ($FeO.2\,Fe^2O^3$); that of Dublin 1 of the protoxyde and 2 of the peroxyde (Mosman). Exposed to moist vapour, they undergo no alteration; but when boiled in the pure air they absorb oxygen, and pass into [illegible] oxyde. They dissolve readily in muriatic acid, with effervescence.

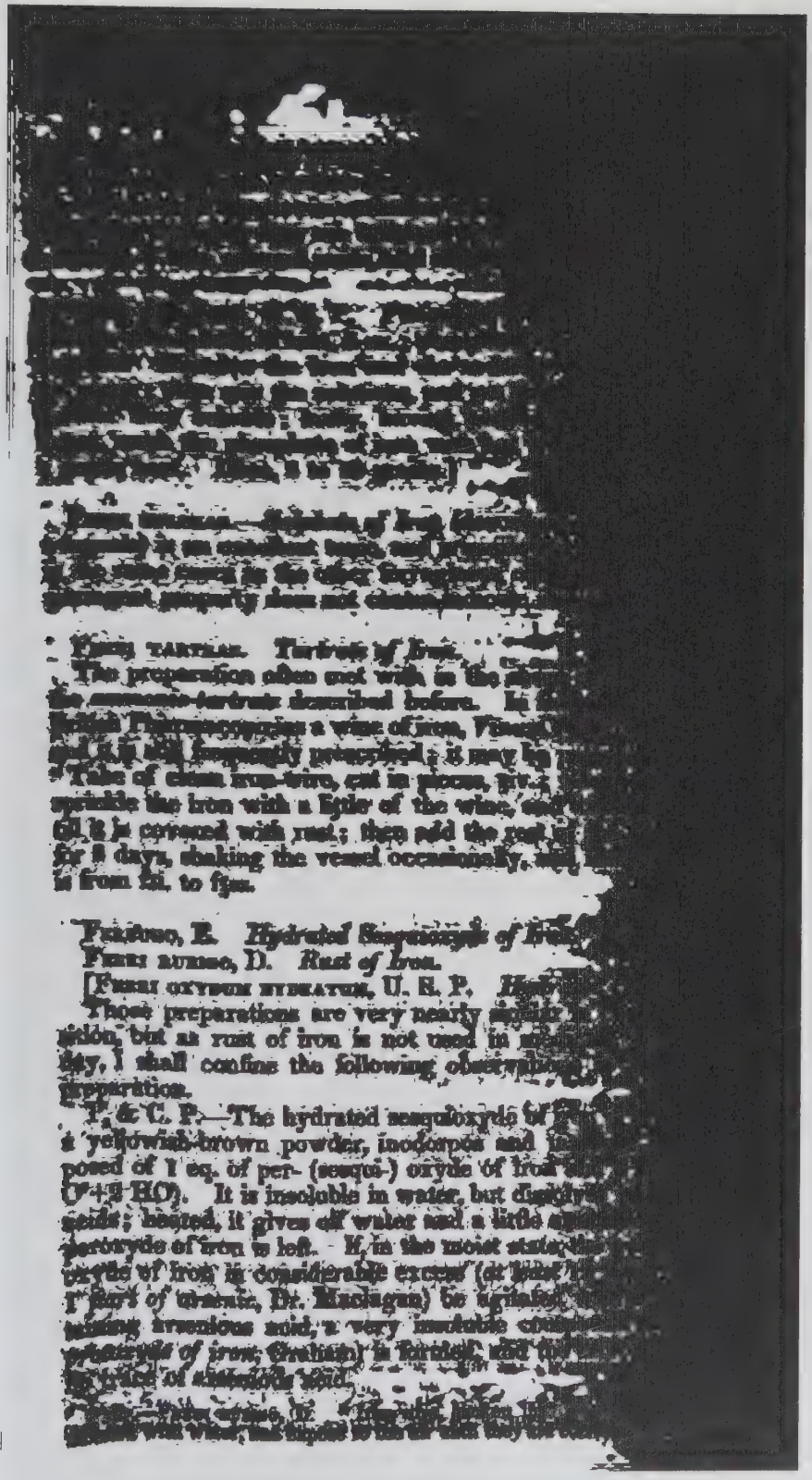
Ferri [illegible] Pulvis, D. [illegible] Powder of Iron which are [illegible] to be prepared by means of a magnet. [illegible] Take of [illegible] Sulphate of iron, [illegible] Carbonate of soda, [illegible] Water, [illegible] Dissolve the sulphate in half the water, and the carbonate in the other half, by degrees, boiling the [illegible] Wash the precipitate with [illegible] water, and immediately add the moist powder to [illegible] Dry the mixture, and immediately reduce the dry powder to fine powder. Keep the powder in a well-stopped bottle. Obs. The sulphate of iron should be crystallized from a solution of equal parts of sulphuric acid and water at a temperature not exceeding 180.

Adulterations.—Black oxyde of iron sometimes contains metallic iron, which it does not dissolve completely in muriatic acid.

The E.—This preparation of iron is not much used in the present day, but formerly, under the name of *Æthiops martis*, it bore a high reputation as a chalybeate tonic. The dose of it is from gr. v. to gr. xx., two or three times a day, made into an electuary with honey or treacle.

Ferri oxydum rubrum, E. Ferri sesquioxydum, L. Ferrum carbonas, D. *Peroxyde of Iron (by precipitation). Sesquioxyde of Iron.*





[illegible] Lastly, [illegible] dry [illegible] of ammonia, [illegible] from the sunshine as directed [illegible] poor off the [illegible] occasions effervescence of the [illegible] which must be poured off [illegible]

[illegible] not being [illegible] The tests of [illegible] which are [illegible] cold water; [illegible] aqua potassæ [illegible] potassium," [illegible] salt which [illegible] deliquescent, [illegible]

[illegible] be used in all [illegible] In combination [illegible] bodies with hot [illegible] water.

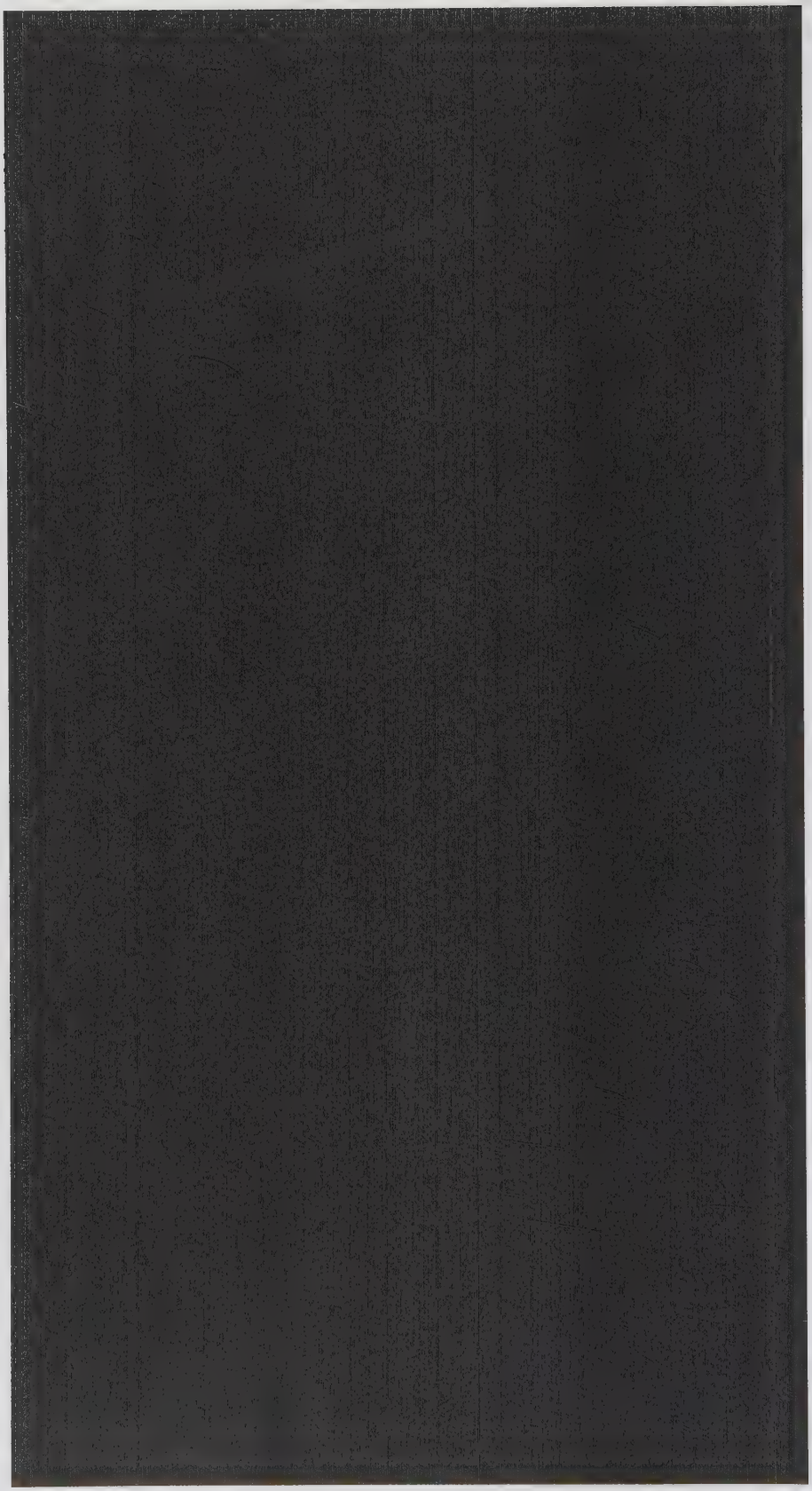
[illegible] and all astringent [illegible]

[illegible] Gentian. *Root* [illegible] of Central [illegible] and to the [illegible]

[illegible] reddish, [illegible] yellow, which [illegible] imported, [illegible]

P. L.—[illegible] Switzerland, by way of Hull. Many [illegible] in length [illegible] an inch to [illegible] each branch [illegible] of a brown [illegible] of a bright yellow colour, and [illegible] It has a faint aromatic odour, which [illegible] and disagreeable, and an intensely [illegible]

C. P.—[illegible] volatile oil, a yellow crystallizable bitter neutral principle (*gentianin* of MM. Henry and Caventou, but [illegible] according to Leconte and Trommsdorf, is a compound of [illegible] colouring matter, not bitter (*gentisin*), a bitter principle (*gentianite*), and fatty matter), a matter identical with bird-lime, green fixed oily matter, a free organic acid, uncrystallizable sugar, gum, yellow colouring matter, and lignin. Gentian



coarse powder, ʒss ; proof spirit, Oj ; mix the powder with the spirit in a vessel of earthenware. Digest for [illegible] frequent agitation. Dose, ℥ xx to ʒj.—"Take Gentian (Gentian, in coarse powder, ʒss ; yellow bark, in coarse powder, ʒj ; bitter orange peel, dried and sifted, ʒij ; cochineal, in powder, ʒj ; proof spirit, Oiss ; sherry, Oxvj ; mix the ingredients and let them lie for 24 hours in the spirit ; add the wine, and [illegible] days more ; strain and express the residue through [illegible] (Squire.) An excellent stomachic and tonic. Dose, [illegible] *Lotion. Gentianæ* D. L. E. (Prepared, as the other vegetable extracts, as follows: Roll the root in eight times its weight of water down to one half; then express the liquor, and when the feculæ have subsided, filter ; evaporate with a moderate heat to the consistence to thicken, and finally to squeeze it with a powerful heat by means of the vapour of boiling water, frequently stirring it as it acquires a consistence so as to prevent the formation of pellicles.) [illegible] bark, sliced, ℥iss ; boiling distilled water, Cong. ij ; macerate for 24 hours ; then boil down to a gallon, and strain the liquor while hot ; lastly, evaporate to a proper consistence." (Ure.) "Take any convenient quantity ; bruise it to a moderately fine powder, and moisten it thoroughly with half its weight of distilled water ; then put it into a percolator, and exhaust it by percolation with more distilled water. Concentrate the liquor by [illegible] it becomes too thick ; and evaporate in the vapour-bath to the consistence." E.) An excellent tonic extract. Dose, [illegible] two or three times a day, in the form of pill ; in fine powder it may be prescribed with the preparations of iron.

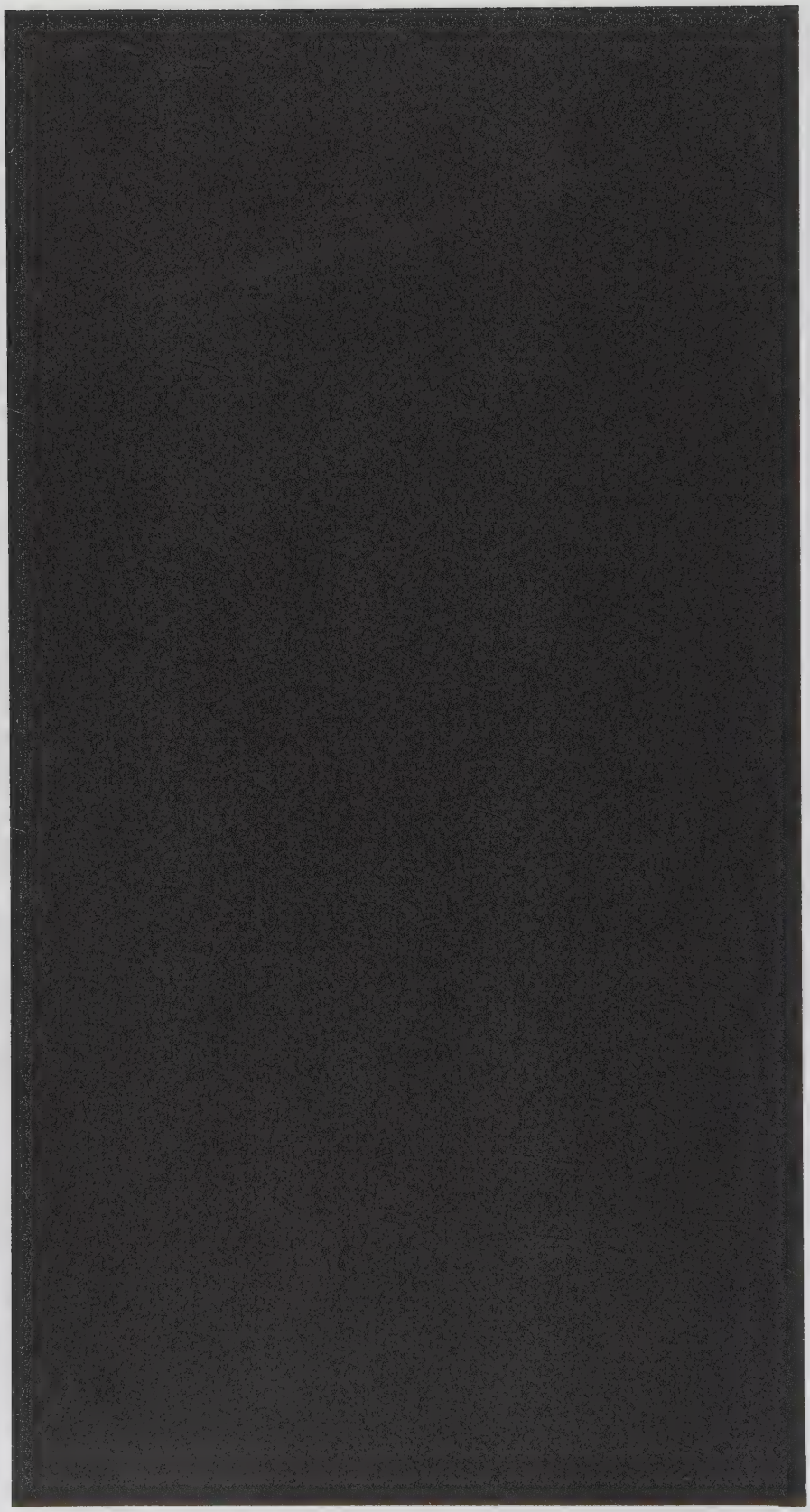
INCOMP.—Solution of diacetate of lead, nitrate of silver, sulphate of iron, and analogous salts.

MENYANTHES, L. E. MENYANTHES TRIFOLIATA, Pers. D. *Common Buckbean. Leaves of Menyanthes trifoliata.*—A [illegible] noxious plant, growing plentifully in marshy places, belonging to the natural family *Gentianaceæ*, and to the Linnæan Class and Order *Pentandria Monogynia*.

B. C.—Roots [illegible] creeping and matted ; leaves ternate, smooth, [illegible] ovate, obtusely toothed ; flowers [illegible] racemose, those at the base [illegible] peduncled ; racemes at many with flowers, tinged purplish externally, [illegible] ly bearded with white filaments within.

The whole of this plant possesses a bitter taste, which [illegible] when dried ; it contains bitter extractive, gum, [illegible] albumen, starch, and a trace of tannic acid. The leaves [illegible] of some power, and may be used as an indigenous substitute [illegible] gentian. The dose of the dried leaves in powder is [illegible] ss., or of an infusion (prepared with ʒj of the dried leaves [illegible] Oj. of boiling water), fʒ ss to fʒij. An extract may be prepared [illegible] the same manner as extract of gentian; the dose of it is [illegible] three gr. x to gr. xx.

INCOMP.—The compounds of lead, [illegible] of lead.



[illegible] part of the spirit used when two parts have passed over, [illegible] agitate well at intervals for about a week, and then [illegible] and which lies at the bottom. This tincture is often [illegible] merely prepared by the process of digestion for 7 or 10 days. [illegible] dose of this tincture for internal use is from 15 to 30 [illegible] generally employed diluted with water as a drink [illegible] decoction of the grater. It is the best [illegible] fowl-drops. When mixed with water, in the proportion of [illegible] portion of the resin, a milky solution is formed.

Quassia, L. E. *Quassiæ lignum*, Germ. D. *Quassie*. F. *Bois de Quassie amère*. D. L.—*Chips of Picræna excelsa*. *Lindley et Paxton's Flower Garden*. E.—The *Quassia* of [illegible] yielding a native of Jamaica, belonging to the natural family [illegible] and to the Linnæan class and order *Decandria Monogynia*. The *Quassia amara*, or Cay quassia-tree, yields both of the quassia present met with in British commerce; it is a native of [illegible] nent of South America, and of many of the West Indian [illegible]

B. C.—*Virtues, &c.* Quassia is a tol bonachic tonic, also [illegible] (see; leaves powdered; flowers small, purplish green, in [illegible] racemes.

P. P.—Quassia-wood is imported in billets from [illegible] inches in diameter, covered with a brown, [illegible] bark. The wood is close, light, of a pale yellow [illegible] less, with an intensely bitter taste. The leaves are [illegible] by medical use.

C. P.—It is composed of [illegible] gummy matter, [illegible] lime, a minute trace of volatile oil, and a peculiar [illegible] principle, which has been named *quassine* or *picrasma*. It [illegible] bitterness to boiling water and to alcohol.

Adulterations.—Quassia-wood being scarce, other [illegible] resemble it in appearance are frequently substituted [illegible] may be at once detected by their wanting the pure bitter [illegible] quassia.

Th. P.—Quassia is among the most powerful of the pure [illegible] and, consequently, is exceedingly [illegible] possesses narcotic properties, and is said to [illegible] poison on insects and some of the lower animals. [illegible] is chiefly used in dyspepsia resulting from [illegible] organs, and is found particularly useful in [illegible] produced by drunkenness. The infusion [illegible] by alkaline remedies in the stomach of the [illegible] vegetable tonics. Quassia is [illegible] most authorities.

D. & M. Ass.—In consequence of the difficulty [illegible] the powder, quassia is rarely [illegible] [illegible] [illegible]

[illegible] Quassia, E. (To be prepared from [illegible] with extract of liquorice root.) [illegible]

[illegible] the infusion: Nitrate of silver, and the [illegible]

SALIX CAPREA, CORTEX; SALIX FRAGILIS, CORTEX; [illegible], D. *Willow bark. Bark of Salix caprea, S. fragilis and Salix alba*, D.—The genus salix of [illegible] family *Salicaceæ*, and in the Linnæan [illegible] *Diandria*. There are no less than 64 species of [illegible] to the British Islands; any of the species which [illegible] tasting bark may be used in medicine.

[illegible] of trees. *Barren flowers*; scales of the catkin single-flowered; [illegible] a nectariferous gland; perianth, none; stamens, 1 to 5. *Fertile flowers*: the catkin single-flowered, imbricated, with a nectariferous gland; [illegible] stigmas, 2, often cleft; capsule 1-celled, 2-valved, many-seeded; [illegible].

—Dried willow bark is met with in partially quilled [illegible] 6 to 8 inches in length; the epiderm is smooth, [illegible] gray colour. It is odourless, but has a very bitter [illegible] astringent taste. It yields its properties to boiling [illegible] alcohol. The constituents of willow bark are, tannin, [illegible] active, gummy matter, chlorophylle, yellowish colouring [illegible] organic salt of magnesia, and a peculiar principle [illegible], on which the febrifuge and tonic properties of the [illegible] it may be prepared as follows:

[illegible] bark of Salix pentandra (or of any other species the bark of which [illegible]; macerate for 24 hours in milk of lime consisting of ℥ij. of recently [illegible] Oviij. of water; then boil for half an hour. Pour off the liquor, [illegible] process twice with the residuum. Mix all the decoctions; allow the [illegible], and pour off the clear liquor; concentrate to Oij.; digest with [illegible] charcoal, filter, and evaporate to dryness. Exhaust with spirit of [illegible] per cent. of alcohol, distil off the spirit, and purify the crystals which form [illegible] animal charcoal and recrystallising. Thus treated, ℥ij. of bark yield [illegible] salicine.

[illegible] crystallises in delicate, colourless, silky needles, which [illegible] a purely bitter taste, but no odour; they are neutral. It [illegible] in the air, is not altered at a temperature of 212°, [illegible], and is decomposed at a higher temperature. It is

soluble in 19 parts of cold, and in 1 of boiling water; is very soluble in alcohol, but insoluble in ether and oil of turpentine. Its composition is $C^{26}H^{18}O^{7}-2HO$.

Th. E.—Willow bark is an excellent tonic, and has been used successfully as a febrifuge. It may be employed in the same cases as cinchona bark, for which it forms an admirable indigenous substitute. Salicin resembles in its properties disulphate of quina, over which it possesses the advantage of not being so liable to irritate the stomach. I have used it very extensively as a tonic in the debility following acute diseases, particularly in cases accompanied with irritability of the digestive organs, and consider its powers to be fully equal to those of disulphate of quina.

D. & M. or Adm.—Of the powdered bark, ʒss. to ʒj.—*Salicin.* As a tonic, gr. ij., three or four times a day; as a febrifuge, ʒi. to ʒij., in divided doses during the intermission. It may be given in powder combined with sugar or some aromatic powder; or dissolved in water sweetened with some agreeable sirup, as sirup of orange peel, or sirup of *Hemidesmus Indicus.*

Simaruba, L. E. Quassia simaruba, cortex radicis, D. *Simaruba. Bark of the root of Simaruba amara,* E.—*of Simaruba officinalis,* L.—*of Quassia Simaruba,* D.—The same tree is indicated by the three colleges, but the nomenclature of different botanists has been adopted. It is a native of Jamaica and Guaiana, and belongs to the natural family *Simarubaceæ,* and to the Linnæan class and order *Decandria Monogynia.*

B. C.—A tall tree, with long, creeping roots; leaves alternate, pinnate; flowers small, whitish, dioecious, in panicles; fruit, 5-ovate, smooth, black capsules, placed on a fleshy disk.

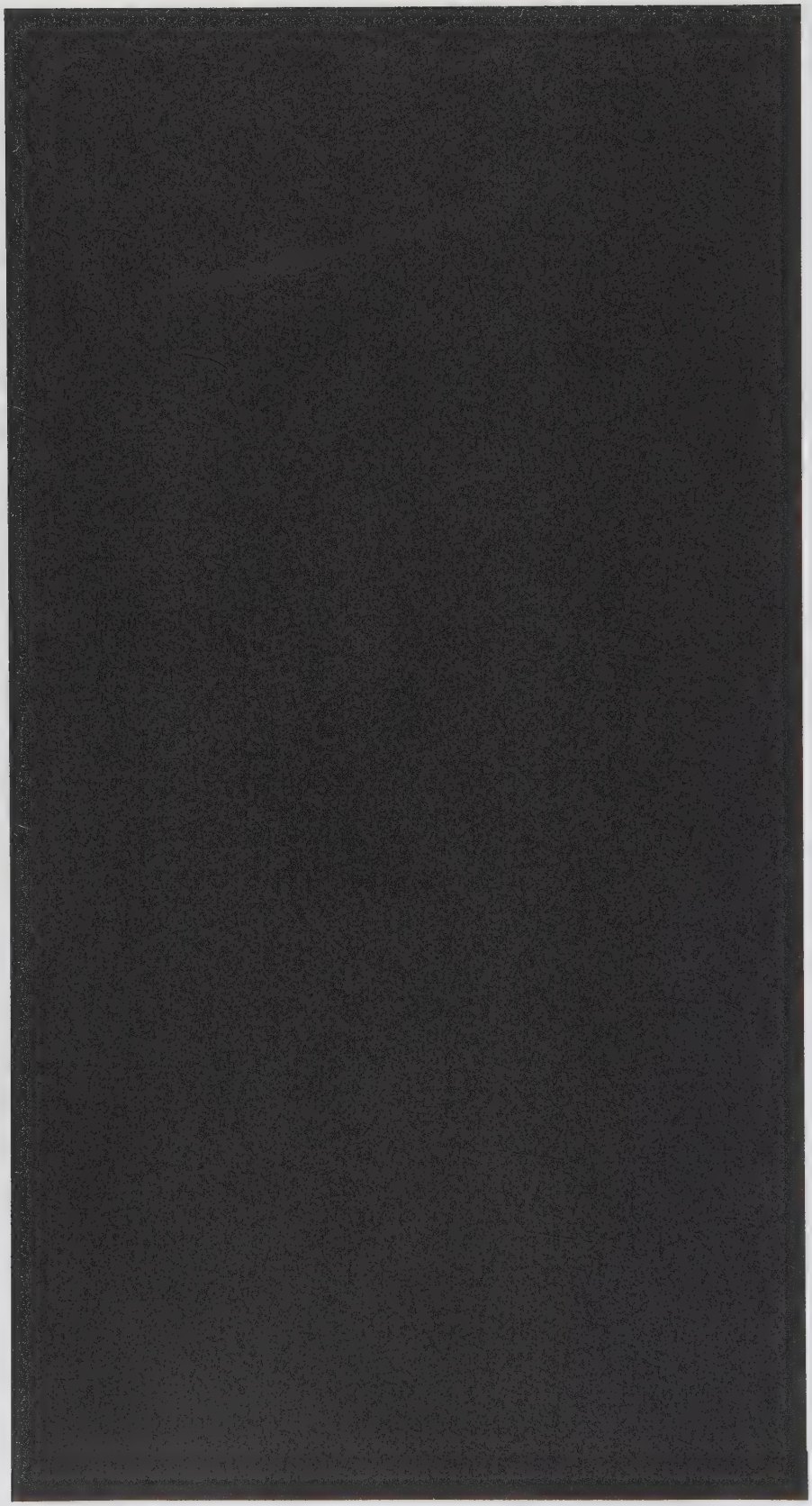
P. P.—The bark of the root is alone officinal; it is imported from Jamaica, and is in long pieces folded flat, covered with a reddish-yellow epidermis, wrinkled and warty; the inner surface of the bark is yellowish-brown. It has a bitter, persistent taste, but no odour.

C. P.—Simaruba bark contains a trace of volatile oil, resinous matter, *ulmin,* a bitter principle analogous to *quassin,* lignin, and some salts. It yields its properties readily to water and to alcohol.

Th. E.—Simaruba is a bitter tonic, not much prescribed in the present day; in large doses it produces vomiting and purging. It has been highly praised for its remediate powers in chronic diarrhœa and dysentery, by many practitioners both on the Continent and in Great Britain. As a bitter tonic it is, however, much inferior to many remedies of this class.

D. & M. or Adm.—It is not given in powder; the following is its only officinal preparation: *Infusum Simarubæ,* D. L. E. (Simaruba, bruised, ʒss. (ʒiij., L. E.); boiling (distilled, L.) water, *by measure,* ℔ss. (Oj., L. E.); infuse for two hours in a covered vessel, and strain ["through linen or calico," E.].) Dose, fʒi. to fʒij.

·—Lime-water; alkaline carbonates; and the salts of lead, · nd silver.



extractive, and some salts. Its active principles are extracted by boiling water.

Tr. E.—Elm bark is at present but little employed in medicine; it is a feeble tonic; the decoction, if taken in large quantity, determines to the skin, and, consequently, has been recommended by many in the treatment of cutaneous affections occurring in debilitated habits; in such cases it often acts beneficially.

D. & M. or Adm.—Used only in the form of decoction.—*Decoctum Ulmi*, D. L. (Fresh elm bark, ʒij. (ʒiiss., L.); distilled water, *by measure*, ℔ij. (Oij., L.); boil down to ℔j. (Oj., L.), and strain.) Dose, fʒiv. to fʒvj., three or four times a day.

Incomp.—Sulphate of iron; acetate of lead; nitrate of silver, and gelatin.

Zinci oxydum.—Oxyde of zinc (described in the division *Astringents*) is employed internally as a tonic in some forms of convulsive and spasmodic diseases, particularly epilepsy, in which it has been found in many instances beneficial, but its use must be persevered in for a considerable period. It may be given in powder or in pill, in doses of gr. j. or gr. ij., gradually increased to gr. x., twice daily.

Zinci sulphas.—*Sulphate of Zinc* (described in the division *Astringents*) has been also administered as a tonic in spasmodic diseases, but its utility in their treatment is very doubtful.

CHAPTER XXII.

SUPPLEMENTARY AGENTS.

In this chapter are included the different articles which, though not employed in medicine for their remediate powers, are in frequent use as *Colouring agents*, *Perfumes*, *Tests*, and *Pharmaceutical agents*.

Ammoniæ oxalas, E. *Oxalate of Ammonia.*

Prep.—*Edin.* "Oxalic acid, ʒiv.; carbonate of ammonia, ʒviij.; distilled water, Oiv.; dissolve the carbonate in the water, add gradually the acid, boil, and concentrate sufficiently for crystals to form on cooling."

This salt is not used in medicine. It was introduced into the last edition of the *Edin. Phar.* as a test for lime and its salts, with which it forms a white precipitate, soluble in nitric acid, but only sparingly soluble in muriatic acid.

Aqua destillata, L. E. Aqua distillata, D. *Distilled Water.*

Prep.—*Dub.* "Water, ℔xx.; put into a glass retort, and having rejected the first pound which comes over, distil with a moderate heat, cong. j." "*Lond.* Water

flowers have a very agreeable odour, which [illegible] and is completely destroyed by drying. The [illegible] be restored by distillation with water; it is imported [illegible] from France and the Southern Europe. It has been [illegible] the London and Edinburgh Pharmacopœias [illegible] [illegible] and as an agent for the [illegible] [illegible] orange-flower water.

Orange-flower water is an article of the Materia Medica [illegible] Edinburgh Pharmacopœia, is being usually imported; the London College have given the following formula for its preparation.

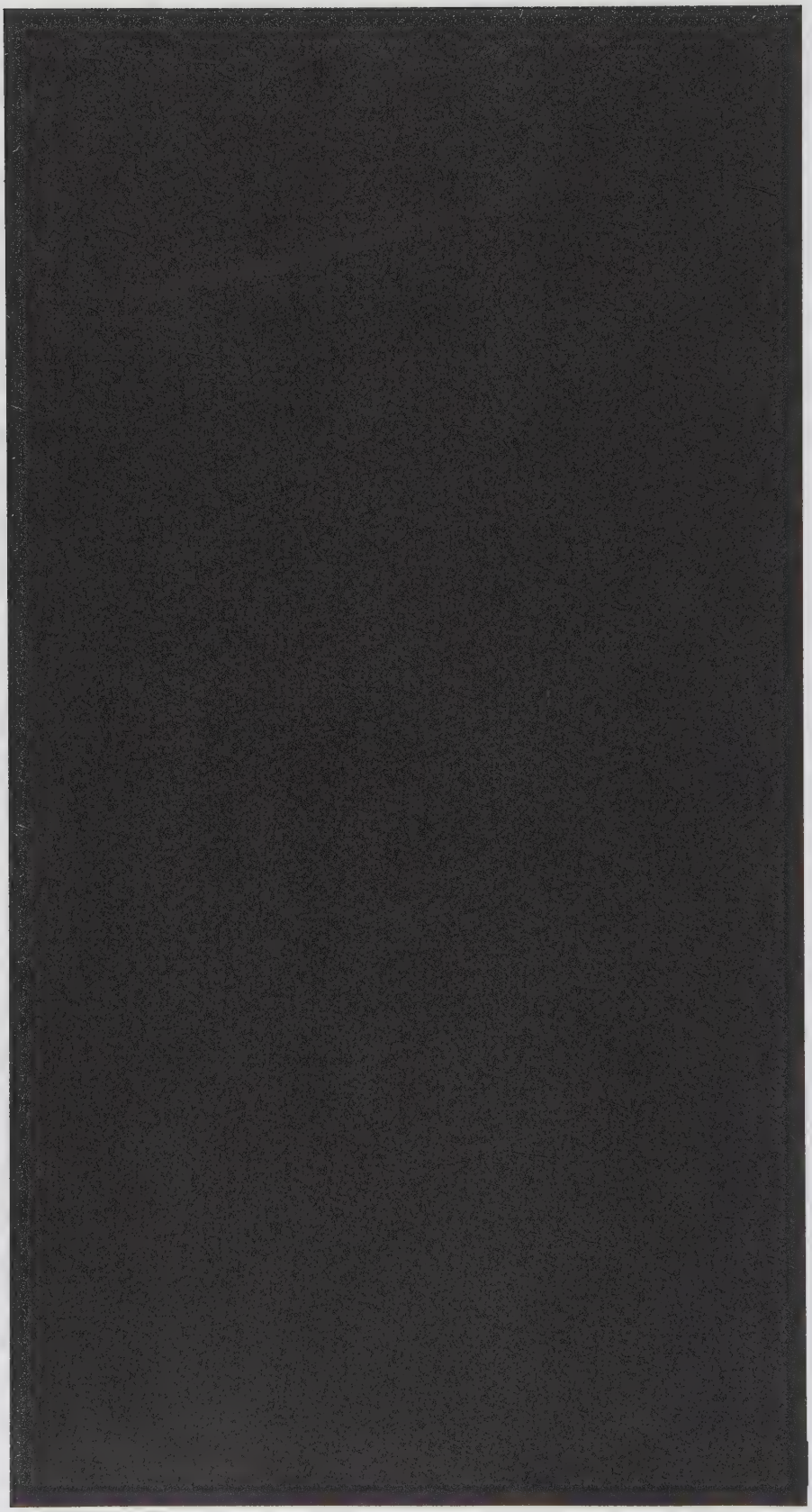
[illegible] orange flowers in [illegible] water [illegible]

It is only employed on account of its fragrant odour as a vehicle for other medicines. As imported it is often impure, and frequently contains traces of lead or copper; its purity may be ascertained "as being readily colourless, and unaffected by sulphuretted hydrogen gas." *Edin. Phar.*

BARYTÆ CARBONAS. L. E. *Carbonate of Baryta.*—This substance is found native in many parts of England, and is known as mineralogists by the name of *Witherite*. It is [illegible] pharmacopœias as being employed for the preparation [illegible] of baryta. It acts as a narcotico-acrid poison, [illegible] man.

BARYTÆ NITRAS. E. *Nitrate of Baryta.*—This salt is not used in medicine; it is directed to be employed by the Edinburgh College as a test, and formulæ are given for its preparation, and [illegible] solutions of a given strength.

From baryta nitras, E.—"Take [illegible] [illegible] [illegible]



cess of air being prevented. It is an article of the Materia Medica in the three pharmacopœias, being prepared on the larger scale for various uses in the arts, particularly for the manufacture of gunpowder. In medicine it is at present only employed to destroy fetor, for which purpose it is used in the form of powder or poultice to gangrenous sores, phagedenic ulcers, &c.: it is also used as a dentifrice, for which it is very generally employed, as by its mechanical action it removes incrustations from the teeth, and by its antiseptic powers it corrects fetor of the breath. Charcoal has been employed in the treatment of various diseases, but the only one in which it is ever employed in Great Britain is dysentery, and it is merely to correct the fetor of the evacuations, for which purpose it is given in doses of gr. xx., frequently repeated.—*Cataplasma Carbonis ligni*, D. (Take of wood charcoal, red hot, and just extinguished by pouring dry sand over it, q. s.: add it to the simple cataplasm warmed.) For gangrenous and fetid sores.

Coccus, L. E. Coccus cacti, D. *Cochineal. The entire insect, Coccus cacti.*—A native of Mexico, belonging to the class *Insecta*, order *Hemiptera*.

The cochineal insect feeds chiefly on the Nopal plant (*Opuntia cochinillifera*), large plantations of which are cultivated for its nourishment in Mexico. They are collected three times a year, killed by immersion in boiling water, and dried with stove heat; the first gathering is the best, consisting entirely of impregnated females, when they are largest, and afford most colouring matter. As met with in commerce, cochineal is in the form of small roundish grains (each grain being a separate insect); they are wrinkled, from one to two lines long, and of a silvery-purplish colour. They are inodorous, but have a rather bitter taste. Cochineal consists of some resinous fatty matters, and a brilliant purplish-red colouring matter, which has been named *cochinillin*; and which is a principal constituent in the pigment technically known as *carmine*.

Cochineal was at one time supposed to possess anodyne properties, and was employed in medicine in the treatment of hooping-cough and neuralgia: at present it is only used as a colouring agent.

Cornu, L. E. Cornua cervina, ramenta, D. *Hartshorn shavings. The Horns of Cervus Elaphas.*

Hartshorn shavings are introduced into the Materia Medica as being employed in the preparation of antimonial powder (see page 111): boiled with water, they form a jelly similar to that obtained from cow's heels, calves' feet, &c. Calcined hartshorn is officinal in the London and Dublin Pharmacopœias: it is nearly similar in composition to the *bone-phosphate of lime*, and was used for the same purposes. (See page 411.)

Prep.—"Burn pieces of hartshorn in an open vessel until they become perfectly white; and then (proceeding as for *prepared chalk*, L.) reduce them to very fine powder," D. L.

[illegible]

[illegible]

Plumbi Carbonas. [illegible]

Plumbi Carbonas Ponderosa. [illegible]

Plumbi Chromas. [illegible]

Plumbi Iodidum. [illegible]

Plumbi Nitras. [illegible]

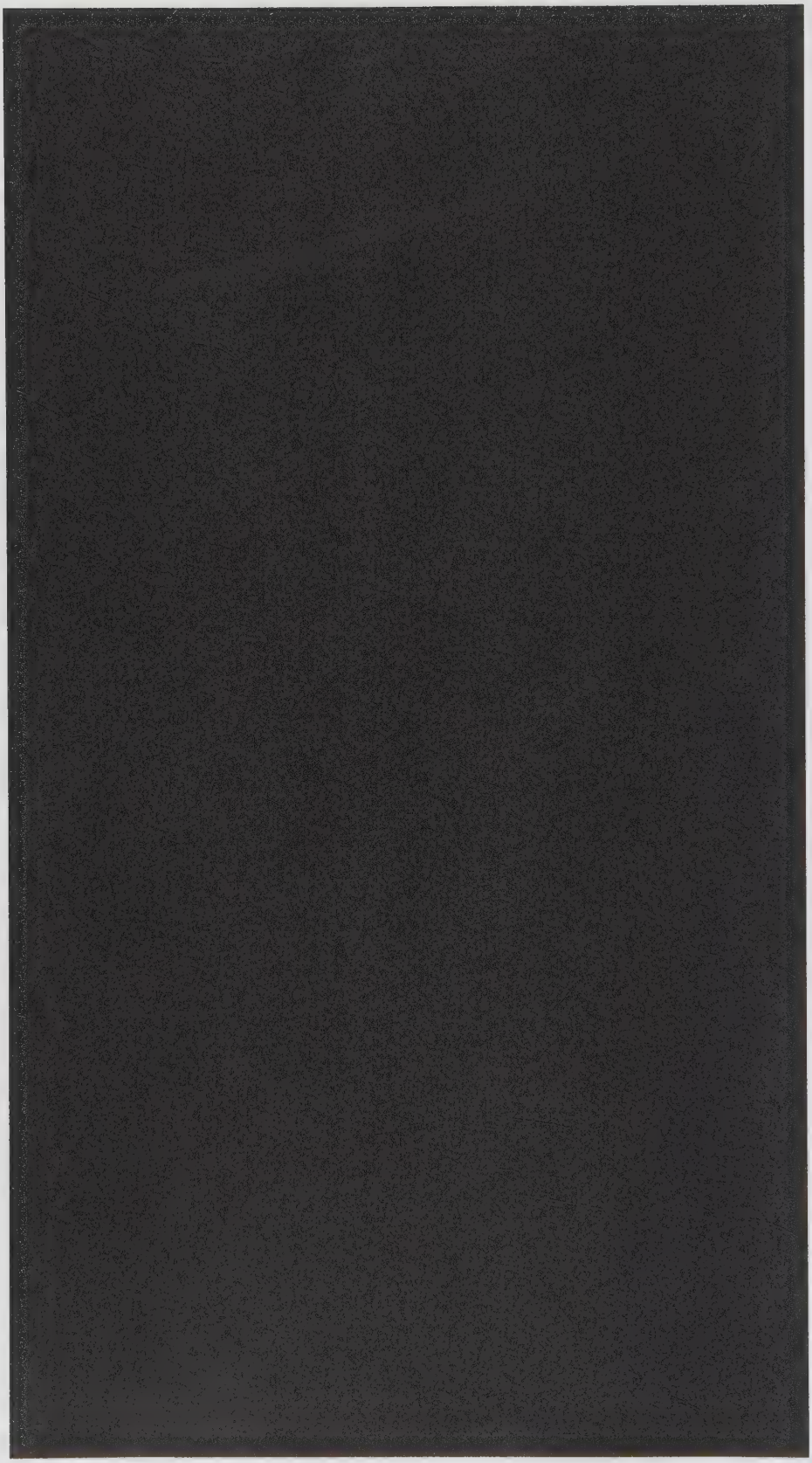
Plumbi Oxidum. [illegible]

Plumbi Oxidum Rubrum. [illegible]

Potassæ Ferrocyanidum. [illegible]

Potassæ Ferrocyanidum. U. S. P. *Ferrocyanide of Potassium.*

This salt has been used by some physicians in America as a sedative, but the results obtained from it are very uncertain, and it would appear to be rather an inert substance. It has been introduced into the pharmacopœias as being a cheap material for preparing hydrocyanic acid. (See page 254.)



copper, arsenic, &c. The London and Edinburgh Colleges have therefore given the following tests, by which it may be ascertained if it is sufficiently pure for the above purpose: "Almost entirely dissolved by diluted sulphuric acid, and the solution is colourless; what is thrown down from the solution by ammonia is white, and when the ammonia is added in excess, it is again dissolved. The sp. gr. of the metal is 6·86," L. "It dissolves in a great measure in diluted sulphuric acid, leaving only a scanty grayish-black residuum. This solution presents the characters of the solution of sulphate of zinc" (see page 82), E.

R Arecoline Hydrobromid. gr. xxx ; Aquæ destillatæ ℥ vj ; Glycerini ℥ ij ; Mucilaginis Acaciæ ℥ ij ; Syrupi Simplicis ℥ ij. M. Dosis 20 minims ℥ j ; 10 minims ℥ ss ; 5 minims gtt. xxx. Hypodermic injection.

R Ipecacuanhæ Fluidextracti ℥ ij ; Infusi Ipecacuanhæ Compositi ad ℥ iv. M. Dosis ℥ j ; 10 minims ℥ ss ; 5 minims gtt. xxx. Hypodermic injection.

R Olei Pini sylvestris gtt. xxx ; Mucilaginis Acaciæ ℥ ij ; Aquæ destillatæ ad ℥ iv. M. Dosis ℥ j ; 10 minims ℥ ss ; 5 minims gtt. xxx. Hypodermic injection.

R Quininæ sulphatis gr. xx ; Pulveris Tragacanthæ gr. x ; Aquæ destillatæ ℥ iv. M. Dividantur in pulveres xx. Capiat unum vel duos pulveres ter in die.

R Pulveris Scammoniæ gr. x ; Pulveris Sennæ ℥ j ; Aquæ Cinnamomi ℥ ij. M. Fiat haustus. Sumat primo mane ieiunus.

ANTISPASMODICS

R Tinctura Valerianæ ℥ ss ; Mistura Camphoræ ad ℥ iv. M. Dosis ℥ j ; 10 minims ℥ ss ; 5 minims gtt. xxx. Hypodermic injection. In the spasms of Tetanus.

R Spiritus Etheris Nitrici ℥ ss ; Aquæ Anisi (Merck) ad ℥ iv. M. Fiat mistura. Capiat cochlearia duo parva quarta quaque hora. In the advanced stages of hydrophobia.

R Chloroformi ℥ ss ; Mucilaginis Acaciæ ℥ ij ; Aquæ Menthæ Viridis ad ℥ iv. M. Fiat haustus. In severe spasmodic colic.

R Tinctura Cimicifugæ racemosæ ℥ ss ; Syrupi Simplicis ℥ ij ; Aquæ destillatæ ad ℥ iv. M. Fiat mistura. Capiat quarta quaque hora. In chronic rheumatism and neuralgia, in hysteria, in chorea, in nervous prostration, &c.

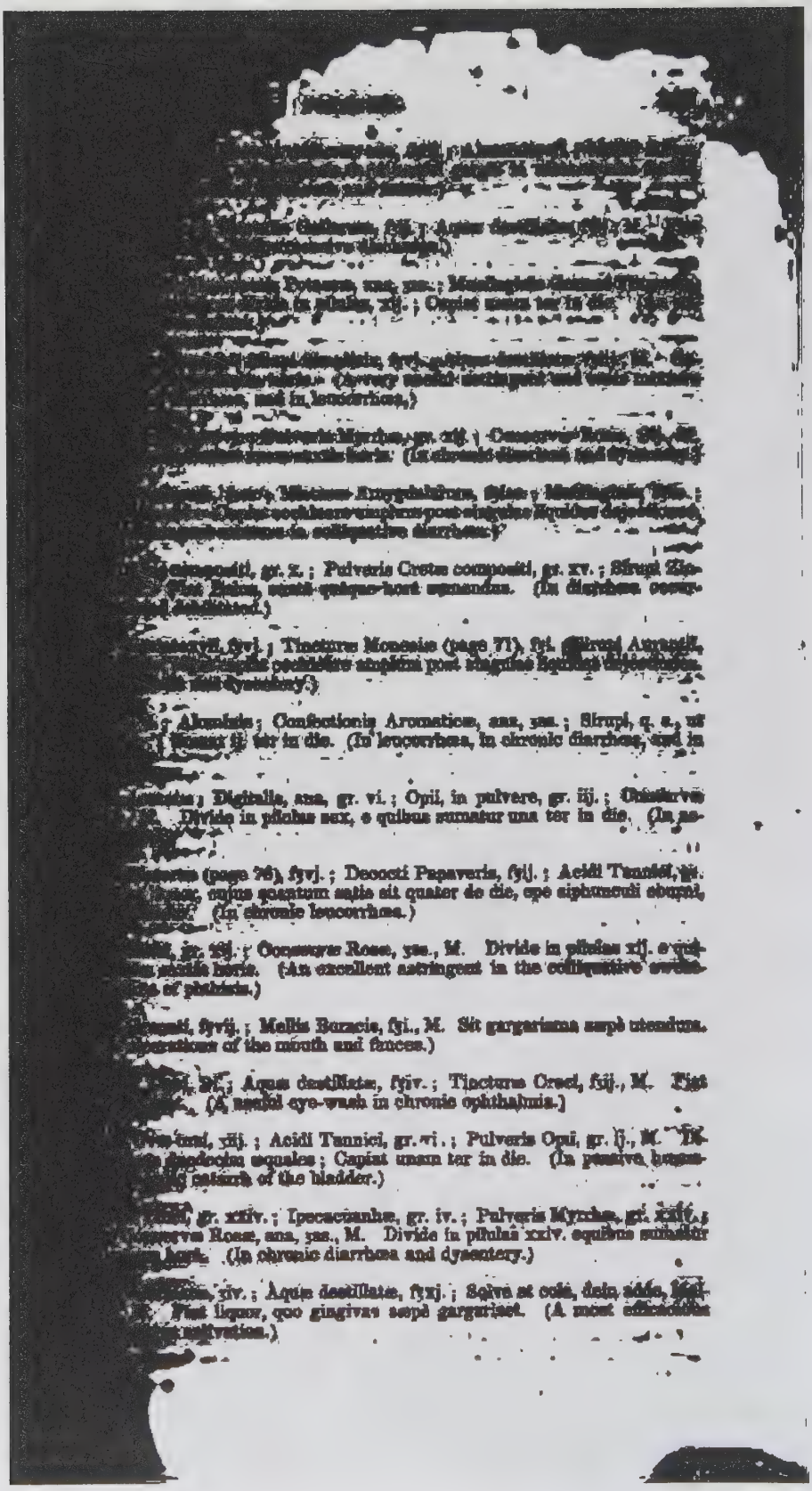
ASTRINGENTS

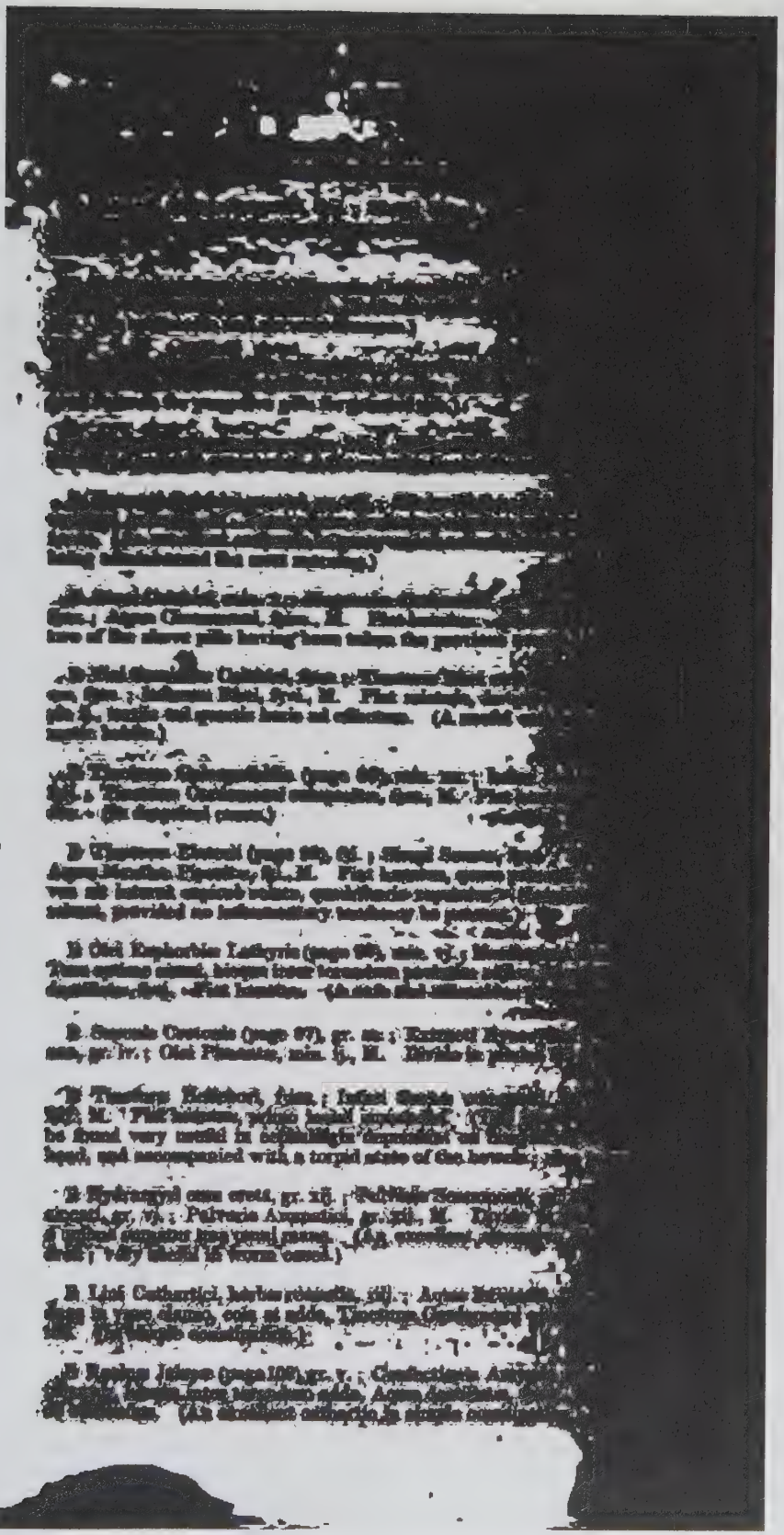
R Acidi Tannici gr. iv ; Aquæ Laurocerasi ℥ j ; Syrupi Pruni Virginianæ ad ℥ iv. M. Fiat mistura. Capiat unum cochleare parvum quarta quaque hora. In diarrhœa and vomiting of pregnancy.

R Acidi Sulphurici aromatici ℥ ss ; Syrupi Rosæ ℥ ij ; Aquæ Cinnamomi ad ℥ iv. M. Fiat mistura. Capiat unum cochleare parvum quarta quaque hora. In chronic diarrhœa.

R Tinctura Chloroformi compositæ ℥ ij ; Aquæ Cinnamomi ad ℥ iv. M. Dosis ℥ j ; 10 minims ℥ ss ; 5 minims gtt. xxx. Hypodermic injection. In the spasms of Tetanus.

R Morphinæ sulphatis gr. ss ; Aquæ Rosæ ad ℥ iv. M. Dosis ℥ j ; 10 minims ℥ ss ; 5 minims gtt. xxx. Hypodermic injection. In the spasms of Tetanus.





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℞ Tinctoræ Aconiti (vulgò Aconiti) ℥ij ; Spiritûs Camphoræ ℥iv ; Aquæ ℥xiv. M. Fiat lotio. (Externally to relieve pain in the head.)

℞ Liquoris Ammoniæ Acetatis ℥iij ; Aquæ ℥iv. M. Fiat haustus. (In febrile complaints, to promote perspiration.)

℞ Olei Crotonis gtt. ij ; Olei Amygdalæ ℥ij. M. Fiat mistura. (As a purgative in obstinate constipation.)

℞ Olei Ricini ℥ij ; Mucilaginis Gummi Arabici ℥j ; Aquæ Anisi ℥iij. M. Fiat haustus. (In irritation of the bowels.)

℞ Olei Terebinthinæ ℥ij ; Vitelli Ovi ; Aquæ ℥iv. M. Fiat emulsio. (In nephritic affections.)

℞ Olei Ricini ℥ij ; Mucilaginis Gummi Arabici ℥j ; Aquæ ℥iij. M. Fiat haustus. (In irritation of the bowels.)

℞ Olei Terebinthinæ ℥ij ; Vitelli Ovi ; Aquæ ℥iv. M. Fiat emulsio. (In nephritic affections.)

℞ Olei Ricini ℥ij ; Mucilaginis Gummi Arabici ℥j ; Aquæ ℥iij. M. Fiat haustus. (In irritation of the bowels.)

℞ Olei Terebinthinæ ℥ij ; Vitelli Ovi ; Aquæ ℥iv. M. Fiat emulsio. (In nephritic affections.)

℞ Olei Ricini ℥ij ; Mucilaginis Gummi Arabici ℥j ; Aquæ ℥iij. M. Fiat haustus. (In irritation of the bowels.)

℞ Olei Terebinthinæ ℥ij ; Vitelli Ovi ; Aquæ ℥iv. M. Fiat emulsio. (In nephritic affections.)

GENERAL STIMULANTS.

℞ Infusi Calumbæ ℥ij ; Ammoniæ, gr. ij ; Tinct. Cinch. ℥ij ; Aquæ Menthæ Piperitæ ℥ij. Fiat haustus. (In nervous weakness, a common tonic.)

℞ Spiritûs Ætheris Sulphurici ℥ij ; Mistura Camphoræ ℥vj ; Confectionis Opii gtt. xl. M. Fiat haustus statim sumendus. (In hysteria usually prescribed.)

℞ Spiritûs Ætheris Sulphurici compositi ℥ss ; Tinct. Opii, gtt. x ; Liquoris Ammoniæ ℥ij ; Spiritûs Menthæ Piperitæ ℥ij. M. Fiat haustus statim sumendus. (A useful stimulant in the low stages of fever.)

℞ Confectionis Aromaticæ gr. x ; Mistura Camphoræ ℥j ; Infusi Quassiæ ℥viij ; Spiritûs Ammoniæ compositi, gtt. xl. M. Fiat haustus quater in die sumendus. (In dyspepsia from debility.)

℞ Olei Cajuputi, gtt. x ; Mucilaginis Tragacanthæ ℥ij ; Tinct. Opii ℥ij ; Aquæ Cinnamomi ℥iij. Misce. Fiat haustus statim sumendus. (In hysteria and nervous affections.)

℞ Spiritûs Ætheris Sulphurici, ℥ij ; Sodæ Carbonatis Mistura ℥iij ; Aquæ Menthæ Piperitæ ℥ij. M. Fiat haustus statim sumendus, et repetatur pro re nata. (A powerful stimulating antispasmodic, often useful in spasm of the stomach and in nervousness.)

℞ Liquoris Ammoniæ ℥ij ; Aquæ Anisi ℥viij ; Sodæ ℥ij. Misce. Fiat haustus effervescens. (In hysterical complaints, and in nervous affections.)

℞ Tinctoræ Aconiti ℥ij ; Aquæ Anisi ℥iij ; Sodæ ℥ij. Misce. Fiat haustus effervescens. (In hysterical complaints, and in nervous affections.)

℞ Tinctoræ Aconiti ℥ij ; Aquæ Anisi ℥iij ; Sodæ ℥ij. Misce. Fiat haustus effervescens. (In hysterical complaints, and in nervous affections.)

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℞ Tinctoræ Aconiti ℥ij ; Aquæ Anisi ℥iij ; Sodæ ℥ij. Misce. Fiat haustus effervescens. (In hysterical complaints, and in nervous affections.)

Acidum Muriaticum dilutum, D.	gtt. x. to gtt. xxx.
——— Muriaticum dilutum, L. E.	ʒss. to ʒi.
——— Nitricum dilutum, D.	gtt. x. to gtt. xx.
——— Nitricum dilutum, L. E.	ʒss. to ʒi.
——— Nitro-muriaticum	gtt. x. to gtt. xl
——— Phosphoricum dilutum	min. xx. to ʒi.
——— Sulphuricum dilutum	min. x. to min. xx.
——— Sulphuricum aromaticum	min. x. to min xx
——— Tartaricum	gr. x. to ʒss.
Aconiti pulvis	gr. iij. to gr. xij.
Æther Nitrosus	min. x. to min. xxx.
——— Sulphuricus	ʒss. to ʒij.
Allium sativum	ʒss. to ʒj.
Aloë Socotrina vel Indica	gr. iij. to gr. xv.
Aloë Hepatica vel Barbadensis	gr. ij. to gr. v.
Alumen	gr. x. to ʒss.
Ammoniacum	gr. x. to ʒss.
Ammoniæ aqua	min. x. to min. xxx.
——— bicarbonas	gr. v. to gr. xxv.
——— carbonas (Antacid)	gr. v. to gr. xx.
——— (Emetic)	gr. xxx. to gr. xl.
——— (Stimulant)	gr. v. to gr. xv.
——— hydrosulphas	min. iv. to min. vj.
——— murias	gr. v. to gr. xxx
Anethi fructus	gr. x. to ʒi
Angelicæ fructus	ʒss. to ʒi.
——— radix	gr. x. to ʒss.
Ainsi fructus	gr. x. to ʒss.
Anthemis nobilis	ʒss. to ʒij.
Antimonii oxydum nitromuriaticum	gr. iij. to gr. x.
Antimonii sulphuretum	gr. x. to ʒij.
——— aureum	gr. j. to gr. iv.
Antimonium tartarizatum (Diaphoretic)	gr. 1-12th to gr. 1-8th
——— (Emetic)	gr. ij. to gr. v.
——— (Expectorant)	gr. 1-16th to gr. 1-8th
——— (Sedative)	gr. j. to gr. iij.
Aqua Ammoniæ acetatis	ʒss. to ʒj.
——— carbonatis	min. xxx. to min. xl.
——— Anethi	ʒss. to ʒiij.
——— Barytæ muriatis	min. v. to min. x.
——— Calcis	ʒi. to ʒiv.
——— Composita	ʒij. to ʒiv
——— Muriatis	min. xxx. to ʒij.
——— Carui	ʒi. to ʒiv.
——— Cassiæ	ʒi. to ʒiv.
——— Chalybeata	ʒij. to ʒiij.
——— Chlorinii	ʒss. to ʒij.
——— Cinnamomi	ʒi. to ʒiv.
——— Fœniculi	ʒi. to ʒiv.
——— Lauro-cerasi	ʒss. to ʒi.
——— Laxativa Viennensis	ʒij. to ʒiv
——— Magnesiæ bicarbonatis	ʒss. to ʒiss.
——— Menthæ piperitæ	ʒi. to ʒij.
——— pulegii	ʒi. to ʒij.
——— viridis	ʒi. to ʒij.
——— Pimentæ	ʒi. to ʒij.
——— Potassæ	min. x. to min. xl.
——— carbonatis	min. x. to ʒi.
——— effervescens	ʒij. to ʒiv.
——— sulphureti	min. x. to ʒi.
——— Sodæ carbonatis	ʒss. to ʒi.
——— effervescens	ʒvj. to ʒviij
Argenti nitras	gr. 1-8th to gr. ij
——— oxydum	gr. ss. to gr. i.
Arsenicum album	gr. 1-16th to
Arsenici iodidum	gr. 1-10th to

ıisia santonica	gr. xx. to gr. xxx.
œtida	gr. x. to 3ss.
iodidum	gr. 1-15th to gr. 1-10th
perchloridum	gr. 1-20th to gr. 1-15th.
peroxydum	gr. 1-10th to gr. ¼th
pulvis	gr. ¼th to gr. iij.
mum Peruvianum	min. xx. to min. xl.
—— Tolutanum	gr. x. to gr. xxx
lonnæ folia	gr. ss. to gr. j.
lonnæ radix	gr. ¼th to gr. ss.
ıthum album	gr. v. to gr. xx.
ıus aromaticus	gr. xx. to ʒj.
ıelas (Alterative)	gr. j. to gr. iij.
—— (Antiphlogistic)	gr. iij. to gr. v.
—— (Cathartic)	gr. ij. to gr. vj.
ıba	gr. x. to 3ss.
chlorinata	gr. ij. to gr. v.
ogia	gr. ij. to gr. v
hora	gr. v. to gr. x.
la	gr. x. to 3ss.
ıaris	gr. ss. to gr. ij.
cum	gr. ij. to gr. viij
ımine pratensis	ʒij. to ʒiij.
ımomi fructus	gr. v. to gr. xx
fructus	ʒi. to ʒij.
phylli	gr. x. to 3ss.
ırilla	gr. x. to ℈ij
æ cortex	gr. x. to 3ss
æ pulpa	ʒss. to ʒiij.
reum	ʒi. to ʒij.
hu	gr. x. to ʒi.
risiæ fermentum	fʒij. to fʒiij.
rin	gr. ij. to gr. v.
tta	gr. x. to gr. xx.
ıonæ cortex (Antiperiodic)	ʒi. to ʒij.
—— (Tonic)	gr. x. to ℈ij.
ıonia	gr. iij. to gr. v.
ımomum	gr. x. to 3ss.
ıici cormus	gr. ij. to gr. viij.
— semina	gr. ij. to gr. v.
ynthis	gr. ij. to gr. viij.
ctio aromatica	gr. xx. to ʒi.
—— aurantii	ʒij. to ʒi.
—— opii	gr. x. to ʒi.
—— piperis nigri	ʒi. to ʒij.
folia	gr. v. to gr. x.
fructus	gr. iij. to gr. vj
erva aurantii	ʒij. to ʒj.
—— rosæ	ʒj. to ʒij.
—— rutæ	℈j. to ʒi.
rajerva	℈j. to ℈i.
iba	min. x. to fʒj.
ındri fructus	3ss. to ʒj.
ıeivus sublimatus	gr. 1-12th to gr. ¼th.
sotum	min. j. to min. ij
ı præparata	gr. x. to ʒij.
ıs sativus	gr. xij. to ʒj.
bæ pulvis	℈j. to ʒiij.
ini fructus	gr. x. to 3ss.
i sulphas (Astringent and Tonic)	gr. ss. to gr. iij.
—— (Emetic)	gr. xij. to gr. xv.
um ammoniatum	gr. ss. to gr. v.
ariæ cortex	gr. x. to ʒss.
d fructus	gr. xx. to ℈ij.

Decoctum Aloës compositum	ʒvss. to ʒvij.
——— Althææ	ʒij. to ʒvij.
——— Bistortæ	ʒj. to ʒvij.
——— Cetrariæ	ʒj. to ʒiv.
——— Cinchonæ	ʒj. to ʒvij.
——— Colocynthidis	ʒij. to ʒvss.
——— Dulcamaræ	ʒij. to ʒvij.
——— Ergotæ	ʒss. to ʒij.
——— Gei	ʒss. to ʒij.
——— Geoffroyæ	ʒvss. to ʒij.
——— Glycirrhizæ	ʒij. to ʒvij.
——— Granati	ʒvss. to ʒij.
——— Guaiaci compositum	ʒvij. to ʒiv
——— Hæmatoxyli	ʒj. to ʒvij.
——— Malvæ	ʒvjv. to ʒvvj.
——— Mezerei	ʒvjv. to ʒvv
——— Pyrolæ	ʒj. to ʒvij.
——— Quercus	ʒj. to ʒvjv.
——— Sarsaparillæ	ʒvjv. to ʒvviij
——— compositum	ʒvjv. to ʒvvj.
——— Senegæ	ʒij. to ʒiiij.
——— Scoparii	ʒj. to ʒjv.
——— Taraxaci	ʒj. to ʒvij.
——— Tormentillæ	ʒj. to ʒiss.
——— Tussilaginis	ʒij. to ʒiiij.
——— Ulmi	ʒjv. to ʒvjv.
——— Uvæ-ursi	ʒvj. to ʒiiij.
Delphinia	gr. 1-12th to gr. ¼th.
Digitalis (Diuretic)	gr. ss. to gr. j.
——— (Sedative)	gr. j. to gr. iij.
Drymis aromatica	℈j. to ʒj.
Elaterina	gr. 1-20th to gr. 1-10
Elaterium	gr. 1-16th to gr. ¼th
Electuarium aromaticum	gr. x. to gr. xl.
——— Catechu compositum	℈j. to ʒij.
——— Cassiæ	ʒij. to ʒj.
——— Opii	gr. x. to ʒj.
——— Sennæ	ʒii. to ʒss.
Ergota	℈j. to ʒi.
Essence of Ginger	min. xx. to min. xl.
——— Pennyroyal	gtt. xx. to gtt. xxx.
——— Peppermint	gtt. xx. to gtt. xxx.
——— Spearmint	gtt. xx. to gtt. xxx.
Extractum Aconiti	gr. ij. to gr. viij.
——— alcoholicum	gr. ¼th to gr. j.
——— Aloes	gr. v. to gr. xv.
——— Anthemidis	gr. x. to ʒss.
——— Artemisiæ absinthii	gr. x. to gr. xx.
——— Belladonnæ	gr. ss. to gr. iv.
——— Calumbæ	gr. v. to gr. xx.
——— Cannabis	gr. x. to gr. xij
——— Cinchonæ	gr. v. to gr. xx
——— Chamæmeli	gr. x. to ʒss.
——— Colchici	gr. j. to gr. iij.
——— aceticum	gr. j. to gr. iij.
——— Colocynthidis	gr. v. to ℈j.
——— compositum	gr. v. to gr. xv.
——— Conii	gr. iij. to gr. v.
——— Digitalis	gr. ¼th to gr. ½th
——— Gentiana	gr. x. to ʒss.
——— Hæmatoxyli	gr. x. to gr. xxx.
——— Humuli lupuli	gr. v. to gr. xx.
——— Hyoscyami	gr. v. to gr. xv.
——— Jalapæ, D. L.	gr. x. to ℈j.
——— Jalapæ, E.	gr. iij. to gr. x.

Extractum Krameriæ	gr. xx. to gr. xl.
—— Lactucæ	℈i. to ʒj.
—— Menyanthes	gr. x. to ʒss.
—— Nucis-vomicæ	gr. ss. to gr. iij.
—— Opii	gr. ss. to gr. iv.
—— Papaveris	gr. ij. to gr. xx.
—— Pareiræ	gr. x. to ʒss.
—— Quassiæ	gr. v. to gr. xv.
—— Quercus	gr. x. to ʒj.
—— Rhei	gr. x. to ʒss.
—— Rutæ	gr. x. to gr. xx.
—— Sabadillæ	gr. ¼th to gr. ½th.
—— Sarsaparillæ	ʒss. to ʒij.
—— fluidum	ſʒss. to ſʒi.
—— Scammonii	gr. ij. to gr. v.
—— Stramonii	gr. ¼th to gr. ss.
—— Taraxaci	gr. x. to ʒss.
—— Uvæ-ursi	gr. v. to gr. xv.
Fel Bovinum inspissatum	gr. v. to gr. x.
Ferri Acetas	min. v. to min. xx.
—— Ammonio-chloridum	gr. v. to gr. xv.
—— Ammonio-citras	gr. v. to gr. viij.
—— Ammonio-tartras	gr. v. to gr. viij.
—— Bromidum	gr. iij. to gr. viij.
—— Carbonas saccharatum	gr. v. to gr. xxx.
—— Citras	gr. v. to gr. viij.
—— Cyanuretum	gr. iij. to gr. vj.
—— et Quinæ Citras	gr. iij. to gr. vj.
—— Iodidum	gr. ij. to gr. v.
—— Lactas	gr. vj. to gr. xij.
—— Limatura	gr. x. to ʒss.
—— Oxydum Nigrum	gr. v. to gr. xx.
—— Rubrum	ʒss. to ʒiv.
—— Pernitras	min. xx. to min. xxx.
—— Sulphas	gr. j. to gr. v.
—— Exsiccatus	gr. ss. to gr. iij.
Ferrum Tartarizatum	gr. v. to gr. xx.
Fœniculi Fructus	ʒss. to ʒi.
Galbanum	gr. x. to gr. xx.
Gentiana	gr. x. to gr. xxx.
Geoffroyæ Cortex	gr. xv. to gr. xxx.
Geum Urbanum	ʒss. to ʒi.
Gigartina Helminthocorton	gr. x. to ʒij.
Granatum	ʒss. to ʒj.
Guaiaci Resina	gr. x. to ʒss.
Helleborus Niger	gr. iij. to gr. xij.
Hydrargyri Acetas	gr. j. to gr. iij.
—— Bicyanidum	gr. 1-12th to gr. ¼to.
—— Biniodidum	gr. 1-16th to gr. ¼th.
—— Iodidum	gr. j. to gr. iij.
—— Oxydum rubrum	gr. ¼th to gr. ss.
—— Sulphuretum nigrum	gr. v. to ʒss.
Hydrargyrum cum Cretâ	gr. x. to ʒss.
—— Magnesiâ	gr. x. to ʒss
Hyoscyami Folia	gr. v. to gr. x.
—— Semina	gr. iij. to gr. viij.
Indigo	gr. v. to gr. x.
Infusum Absinthii	ſʒj. to ſʒij.
—— Anthemidis	ſʒj. to ſʒij.
—— Armoraciæ compositum	ſʒj. to ſʒij.
—— Arnicæ	ſʒij. to ſʒss.
—— Aurantii compositum	ſʒj. to ſʒij.

Infusum Buchu	ʒvi. to ʒvij.
——— Calumbæ	ʒij. to ʒvij.
——— Caryophylli	ʒj. to ʒvij.
——— Cascarillæ	ʒj. to ʒvij.
——— Catechu compositum	ʒvi. to ʒvij.
——— Cetrariæ	ʒj. to ʒvij.
——— Chamæmeli	ʒj. to ʒvij.
——— Chiratæ	ʒj. to ʒvij.
——— Cinchonæ	ʒj. to ʒviij.
——— Cort. Benedictæ	ʒiss. to ʒviij.
——— Cuspariæ	ʒvi. to ʒvij.
——— Digitalis (Diuretic)	ʒvj. to ʒss.
——— (Sedative)	ʒvi to ʒvij.
——— Ergotæ	ʒss. to ʒj.
——— Gallæ	ʒss. to ʒvij.
——— Gentianæ compositum	ʒj. to ʒvij.
——— Granati radicis	ʒss. to ʒiss.
——— Krameriæ	ʒij. to ʒvij.
——— Lauri nobilis	ʒss. to ʒvij.
——— Limonis	ʒvij. to ʒiv.
——— Lupuli	ʒvi. to ʒvij.
——— Marrubii	ʒvij. to ʒiv.
——— Melissæ	ʒvj. to ʒiv.
——— Menthæ simplex	ʒij to ʒvj.
——— compositum	ʒj. to ʒviij.
——— Menyanthis	ʒj. to ʒvj.
——— Pareiræ	ʒj. to ʒiv.
——— Quassiæ	ʒvi to ʒij.
——— Rhei	ʒij. to ʒiv.
——— Rosæ acidum	ʒij. to ʒvij.
——— Sabinæ	ʒss. to ʒj.
——— Sarsaparillæ compositum	ʒviv. to ʒvj
——— Sassafras	ʒij to ʒvij.
——— Scoparii	ʒij to ʒvij.
——— Scillæ	ʒvj to ʒviij.
——— Senegæ compositum	ʒvj. to ʒiv.
——— cum Tamarindis	ʒvj. to ʒiv.
——— Serpentariæ	ʒss to ʒvij.
——— Simarubæ	ʒij to ʒvij.
——— Spigeliæ	ʒvj to ʒiv.
——— Valerianæ	ʒij to ʒvij.
Inula Helenium	gr. xx to ʒij.
Ipecacuanha (Emetic)	gr. xij to gr. xx.
——— (Expectorant)	gr. iij to gr. vj.
Jalapa	gr. x to gr. xxx
Kino	gr. x to ʒss.
Krameria	gr. x to ʒss.
Lactucarium	gr. v. to gr. xij.
Linum Catharticum	ʒj to ʒiss.
Liquor Ammoniæ	min. x to min. xxx.
——— sesquicarbonatis	min. xxx. to min. lx.
——— Arsenicalis	min. v. to min. x.
——— Arsenici et Hydrargyri hydriodatis	min x to min. xxx.
——— Calcis	ʒij to ʒiv.
——— Cinchonæ	min. xx. to ʒss.
——— Hydrargyri bichloridi	ʒss. to ʒij.
——— Iodinii compositus	min v. to min. xv.
——— Potassæ	min. x. to min. xl.
——— carbonatis	min. x. to ʒj.
——— effervescens	ʒij. to ʒviij.
——— Potassii iodidi compositus	ʒj. to ʒss.
——— Sodæ chlorinatæ	min. xx. to min. xxx.
——— effervescens	ʒvj. to ʒviij

ıraxaci	min. x. to min. xl.
ırtari Emetici	min. xx. to min. xxx.
. . . . .	gr. vj. to gr. xij.
(Antacid)	gr. x. to gr. xv.
(Cathartic)	℈j. to ʒj.
carbonas (Antacid)	gr. xv. to ʒss.
——— (Cathartic)	ʒi. to ʒij.
Sulphas	ʒij. to ʒi
. . . . .	ʒi. to ʒij.
. . . . .	ʒss. to ʒj
. . . . .	ʒij. to ʒiv.
cs	gr. x. to ʒss
mmoniaci	ſʒss. to ſʒj
mygdalarum	ſʒi. to ſʒij.
ssafœtidæ	ſʒss. to ſʒiss.
amphoræ	ſʒi. to ſʒij.
——— cum Magnesiâ	ſʒss. to ſʒj.
ascarillæ composita	ſʒi. to ſʒiss.
reasoti	ſʒi. to ſʒij.
retæ	ſʒj. to ſʒij.
erri composita	ſʒi. to ſʒij.
— aromatica	ſʒj. to ſʒij.
entianæ composita	ſʒj. to ſʒij.
uaiaci	ſʒss. to ſʒij
onesiæ	ſʒss. to ſʒij.
oschi	ſʒj. to ſʒij.
ammonii	ſʒj. to ſʒij.
piritus Vini Gallici	ſʒss. to ſʒiss.
. . . . .	gr. v. to gr. xv.
. . . . .	gr. ¼th to gr. ss.
Acetas	gr. ¼th to gr. ss.
Murias	gr. ¼th to gr. ss.
. . . . .	gr. x. to gr. xx
ruriens	ʒj. to ʒss.
Moschata	gr. x. to gr. xxx.
. . . . .	gr. x. to gr. xxx
m Filix-mas	ʒj. to ʒiij.
a	gr. v. to gr. xx.
ygdalæ Amaræ	min. ¼th to min. ½.
ethi	min. j. to min. v.
isi	min. ij. to min. viij.
themidis	min. i. to min. v.
uputi	min. v. to min. x
ui	min. j. to min. x.
yophylli	min. ij. to min. viij.
siæ	min. ij. to min. v.
namomi	min. j. to min. v.
baibæ	min. xv. to min. xxx.
tonis	min. j. to min. ij.
ebæ	min. x. to min. xxx.
horbiæ Lathyris	min. iv. to min. viij.
cis Maris	min. xx. to min. xxx.
nicnli	min. ij. to min. x
iperi	min. v. to min. x
andulæ	min. ij. to min. v
ionum	min. ij. to min.
ithæ Piperitæ	min. ij. to min. v.
—— Pulegii	min. ij. to min. v.
—— Viridis	min. ij. to min. v
rhus	ſʒss. to ſʒj.
isticeæ	min. j. to min. v.
æ	ſʒj. to ſʒij.
ani	min. j. to min. iij.

Decoctum Pimentæ	min. [illegible] to [illegible]
Fœni	fʒss. to fʒij.
Rosmarini	min. [illegible] to [illegible]
Sabinæ	min. [illegible] to [illegible]
Sassafras	min. [illegible] to [illegible]
Senegæ (Anthelmintic)	fʒss. to fʒij.
—— (Cathartic)	fʒss. to fʒiss.
—— (Diuretic)	min. [illegible] to min. [illegible]
—— (Stimulant)	min. [illegible] to min. [illegible]
Elaterium	gr. ss. to j.
Enema	gr. xx. to gr. xl.
Epispastic	gr. [illegible] to gr. [illegible]
Errhines	[illegible] to [illegible]
Catechu	[illegible] to [illegible]
Scillæ (Emetic)	fʒj. to fʒij.
—— (Expectorant)	min. [illegible] to min. [illegible]
Pareira Brava	ʒss. to ʒj.
Pilulæ Aloes compositæ	gr. [illegible] to gr. xv.
—— cum Myrrha	gr. [illegible] to gr. [illegible]
et Assafœtidæ	gr. [illegible] to gr. xv.
et Ferri	No. [illegible] to [illegible]
ante Cibum	No. [illegible] to [illegible]
Aloëticæ	No. [illegible] to [illegible]
Assafœtidæ	gr. [illegible] to ʒj.
Calomelanos compositæ	gr. [illegible] to gr. [illegible]
Calomelanos et Opii	No. [illegible] to [illegible]
Cambogiæ compositæ	gr. [illegible] to gr. xx.
Colocynthidis compositæ	gr. [illegible] to gr. xv.
—— —— et Hyoscyami	No. [illegible] to [illegible]
Conii compositæ	gr. [illegible] to gr. [illegible]
Digitalis et Scillæ	gr. [illegible] to gr. [illegible]
e Styrace	gr. [illegible] to gr. [illegible]
Ferri Carbonatis	[illegible] to [illegible]
compositæ	gr. [illegible] to gr. xx.
Sulphatis	gr. [illegible] to gr. xv.
Galbani compositæ	gr. [illegible] to [illegible]
Cambogiæ et Scammonii	gr. [illegible] to gr. xx.
[illegible]	gr. [illegible] to gr. v
[illegible]	gr. [illegible] to gr. xx.
[illegible]	gr. [illegible] to gr. xv
Hydrargyri cum gummi	gr. [illegible] to gr. xx.
et Opii	gr. [illegible] to gr. viij.
Hydrargyri Chloridi	[illegible] to [illegible]
Plumbi Oxidi	gr. [illegible] to gr. xij.
Rhei	gr. [illegible] to gr. xv.
compositæ	gr. [illegible] to ʒj.
et Ferri	gr. [illegible] to gr. xv.
Scammonii compositæ	gr. [illegible] to gr. xx.
Saponis et Opii	gr. [illegible] to gr. x.
Scillæ compositæ	gr. [illegible] to gr. xv.
Potassæ	[illegible] to ʒj.
Potassæ Carbonas	gr. v to ʒj.
Nitratis	gr. v to gr. xx.
Pulvis	gr. iij to gr. v.
Pulvis Aloës	gr. [illegible] to gr. viij
Jalapæ	gr. iij. to gr. v.
Pyrophosphas Ferri	[illegible] to ʒj.
Quassiæ Extractum (Cathartic)	[illegible] to ʒij.
(Diuretic)	gr. x. to gr. xx.
Resinosus	gr. x. to gr. xx
Sulphas	[illegible] to ʒiss.
Tartras (Cathartic)	ʒiss to ʒvj.
—— (Diuretic)	gr. xx. to ʒj.
Tinea	gr. v. to gr. xxx.
Vinum	gr. x. to gr. xx.

ras (Diuretic)	gr. xxx. to gr. xl.
— (Refrigerant)	gr. x. to gr. xx.
phas	ʒi. to ʒvj.
—— cum Sulphure	ʒss. to ʒi.
tras	ʒij. to ʒx.
midum	gr. iij. to gr. xij.
midum	gr. ℈ to gr. ℈.
idum	gr. v. to gr. xv.
phuretum	gr. iij. to gr. x.
compositus	gr. x. to ℈i.
cum Canellâ	gr. vj. to gr. xviij.
inis compositus	gr. xij. to ℈ij.
nonialis	gr. iij. to gr. x.
naticus	gr. v. to gr. xx
amomi compositus	gr. v. to gr. xx.
e compositus	gr. x. to gr. xxx.
———— cum Opio	gr. xx. to gr. xl.
e	gr. v. to ℈i.
acuanhæ compositus	gr. v. to gr. xx.
æ compositus	ʒss. to ʒi.
compositus	gr. x. to gr. xxx.
liæ Inflatæ	gr. j. to gr. v.
(Stomachic)	gr. v. to gr. x.
(Cathartic)	℈i. to ℈ij.
compositus	ʒss. to ʒi.
us compositus	ʒij. to ʒss.
monii compositus	gr. x. to gr. xx.
giæ Ustæ	ʒi. to ʒiij.
ni	ʒss. to ℥i.
acanthæ	ʒss. to ʒij.
——— compositus	ʒj. to ʒij.
	gr. xv. to gr. xxx.
rtex	ʒss. to ʒi.
	gr. iij. to gr. v.
as	gr. j. to gr. v.
s	gr. j. to gr. v.
lphas	gr. j. to gr. v.
as	gr. j. to gr. v.
s	gr. j. to gr. v.
phas	gr. j. to gr. v
nas	gr. j. to gr v.
ras	gr. j. to gr. v.
aibæ	gr. x. to ʒss.
ccæ	No. 10 to 20.
torum	ʒss. to ℥ii.
ulvis	gr. j. to gr. v
	gr. v. to gr. xv.
	gr. v. to gr. xx.
rifuge)	℈i. to ℈ij.
nic)	gr. ij. to gr. v.
	ʒss. to ʒi.
is	gr. j. to gr. iij.
nus	gr. xij. to ℈j.
	ʒi. to ʒij.
m	gr. viij. to gr. xxiv
tic)	gr. viij. to gr. xij.
ctorant)	gr. j. to gr. iss.
etic)	gr. j. to gr. iij
	gr. x. to ʒss.
a	ʒij. to ℥ss.
Radix	gr. x. to ʒss.
netic)	ʒss. to ʒi.
s	gr. x. to gr. xx.

Siruphs Aceti	ʃʒij. to ʃʒj.
——— Althææ	ʃʒss. to ʃʒi
——— Aurantii	ʃʒij. to ʃʒss.
——— Croci	ʃʒii. to ʃʒss.
——— Ferri Iodidi	min. xv. to min. lx.
——— Lactatis	ʃʒij. to ʃʒss.
——— Hemidesmi	ʃʒi. to ʃʒij.
——— Ipecacuanhæ (Emetic)	ʃʒi. to ʃʒij.
——— (Expectorant)	ʃʒi. to ʃʒij.
——— Jalapæ	ʃʒij. to ʃʒiv.
——— Limonum	ʃʒi. to ʃʒij.
——— Mori	ʃʒi. to ʃʒij.
——— Papaveris	ʃʒss. to ʃʒi.
——— Potassii Cyanidi	ʃʒij. to ʃʒvj.
——— Rhamni	ʃʒss. to ʃʒi.
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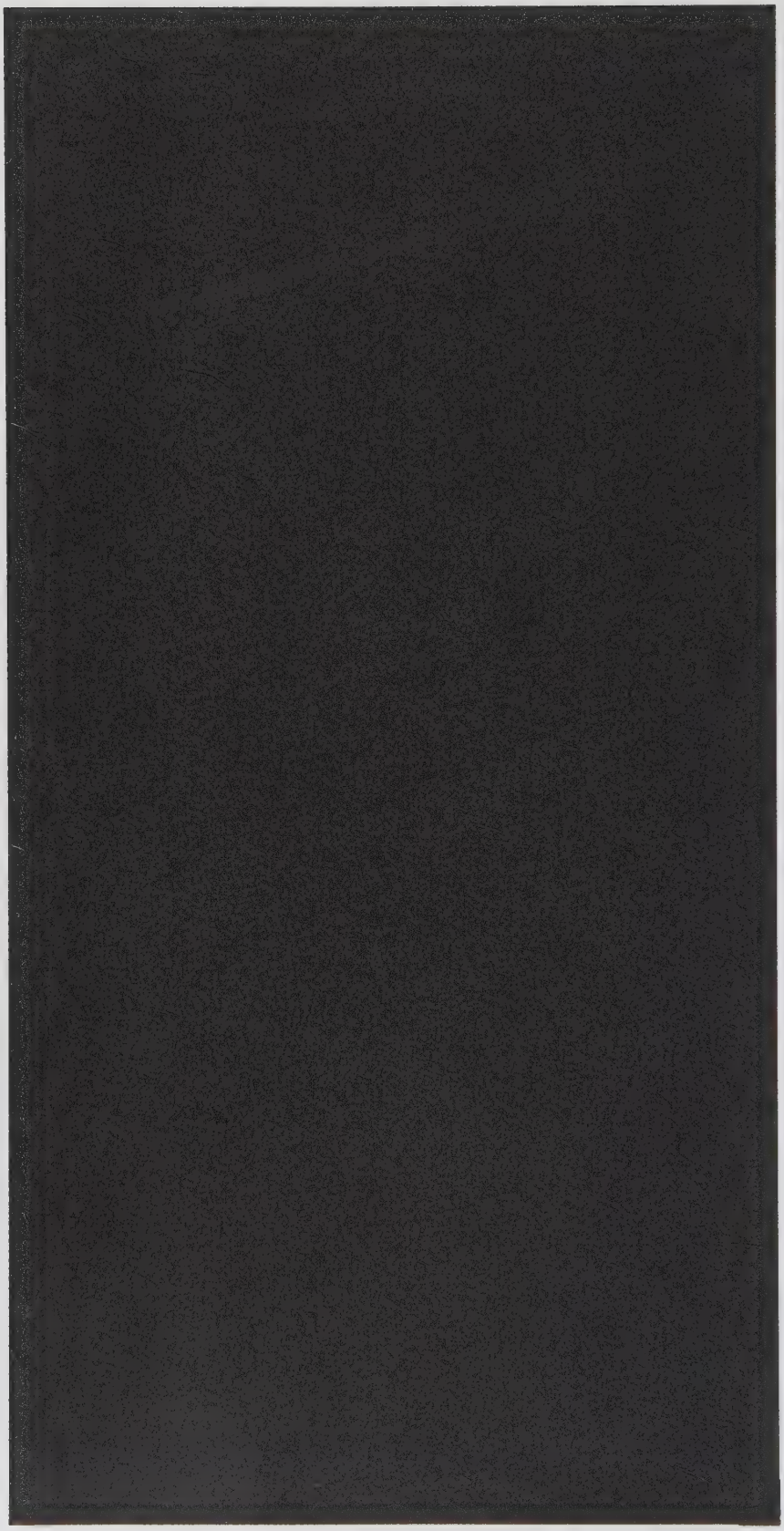

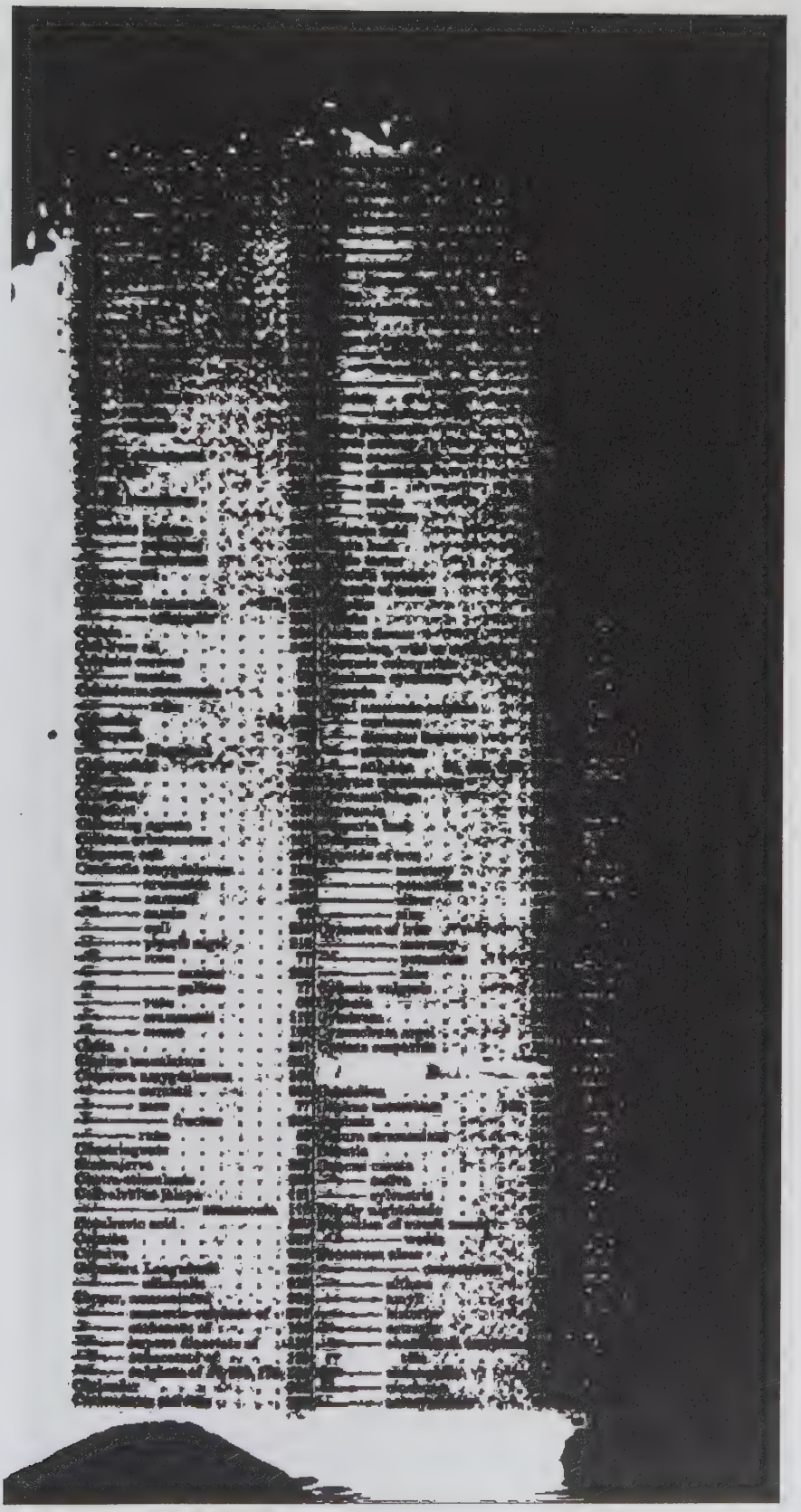

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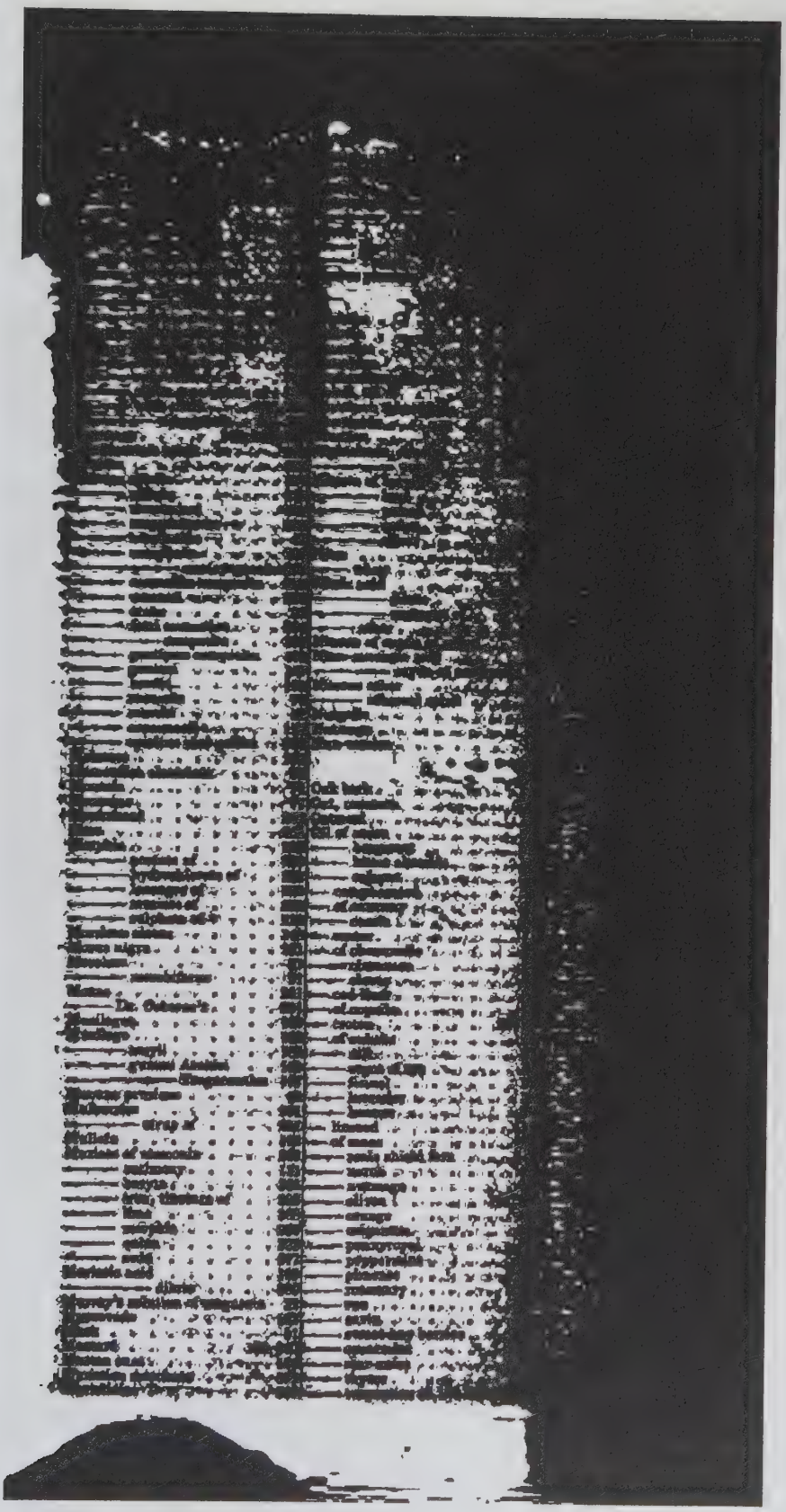

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